ENABLING INCLUSIVE AND SUSTAINABLE GROWTH

SUMMARY OF IGF 2016
FULL REPORT

IGF Internet Governance Forum

The 11th Internet Governance Forum (IGF)
6-9 December 2016
Jalisco, Mexico

The 11ᵗʰ Internet Governance Forum (IGF): 'Enabling Inclusive and Sustainable Growth'

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Note by UNDESA

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EDITOR'S INTRODUCTION

This report of the 11th Internet Governance Forum in Jalisco, Mexico, adopts a different structure from those of previous years. The IGF Secretariat is charged with producing a record of the event, and is taking new approaches to presenting the material.

The 11th meeting had two key organisational features:

- A set of main sessions on the most important themes for the year
- Many smaller sessions comprising workshops, Best Practice Forums, Dynamic Coalitions and so on grouped into eight themes, such as access and diversity, human rights and cybersecurity, as well as open forums.

As such, we present detailed reports on the main sessions as they reflect the most important topics highlighted by the Multistakeholder Advisory Group (MAG), and include contributions by the most 'high-level' participants, experts and representatives present at the IGF.

Also included are a set of eight theme reports, some of which pick up on debate at the main sessions – in particular, sustainable development which was the overarching theme at the meeting, given the importance of discussing how the internet and the digital economy can support the UN's Sustainable Development Goals. Indeed, one of the eight themes was 'sustainable development and the Internet economy'.

In these theme reports we set out the main aspects of debate and discussion for each theme, together with edited reports of the workshops and other session types that fall under the themes. It is apparent of course, that various topics in these themes are 'cross-cutting' across other themes – for example, access and diversity issues are common to gender and youth, and human rights. But the IGF organisers have taken care to emphasise approaches that are most suited to each theme, with discussion points and speakers to match.

We also start the report with a detailed summary from the IGF host country chair. This gives a good overview of the issues discussed at IGF11, including organisational aspects.

In addition we have produced a 'short report', which includes more details from the main session and theme reports. This gives three ways to access the material.

The IGF annual meeting generates a lot of material, which is increasing in volume each year. As we have a mandate for the IGF until 2025, following the 10-year renewal, it will only get more challenging to present the meetings, and we welcome suggestions on any aspects of presentation that the community would find of most value.

SUMMARY OF PREPARATIONS

Planning the annual IGF meeting takes a lot of work and is the responsibility of a major multistakeholder exercise in its own right, that of the Multistakeholder Advisory Group (MAG).

The 11th IGF took on added impetus following the decision at the end of 2015 of the World Summit on the Information Society (WSIS) to renew the IGF's mandate for a further 10 years. That was among the statements in the WSIS outcome document, but another and crucial part of the document was its commitment build on the UN General Assembly's resolution of 25 September 2015, 'Transforming our world: the 2030 Agenda for Sustainable Development', which adopted the 17 Sustainable Development Goals (SDGs).

"We commit to harnessing the potential of ICTs to achieve the 2030 Agenda for Sustainable Development and other internationally agreed development goals, noting that ICTs can accelerate progress across all 17 SDGs," said the outcome document, and it is the main theme that the IGF MAG also adopted for IGF11, in line with this commitment and the IGF's remit as a multistakeholder forum for helping to build the information society, bridging digital divides and fostering sustainable development.

The MAG had two meetings to decide the agenda for IGF11 (and also confirm the venue and other administrative details). The first was the 'open consultations and MAG meeting' on 4-6 April 2016, in Geneva, where these were among the decisions:

- It was announced that the 2016 IGF annual meeting was 'tentatively' scheduled to be held from 6-9 December in Guadalajara, Mexico, at the Instituto Cabanas (a UNESCO World Heritage Site), pending final confirmation from Mexico as the host country, and the UN
- It was decided that the main theme and title of the 2016 IGF would be: 'Internet Governance Forum 2016 Enabling Inclusive and Sustainable Growth'. And a main session on the SDGs
- The MAG chair appointed Ambassador Benedicto Fonseca Filho (Ministry of External Affairs, Brazil) as special advisor to assist with outreach efforts within the UN and with senior policy makers
- It was decided to give National and regional IGFs (NRIs), Best Practice Forums (BPFs), Dynamic Coalitions (DCs), and intersessional work on Connecting the Next Billion (CNB, Phase II) space to hold main/thematic sessions
- There was agreement that BPF work should continue on the themes of Internet Exchange Points (IXPs), IPv6, cybersecurity, and gender and access.

MAG members were also mindful that the WSIS outcome document supported the recommendations of the Commission on Science and Technology for Development (CSTD) on improvements to the IGF, and agreed to discuss setting up a working group to address these at a future meeting.

This first meeting also took stock of the 2015 meeting in João Pessoa, Brazil, and the success of the youth program and tangible outputs form NRIs, BPFs, DCs, and there was agreement that these programs should be integrated more into the 'mainstream' IGF, especially the NRIs. It was also noted that in 2015 there was strong participation by high-level officials such as the WSIS+10 co-facilitators and UN special rapporteurs, and this should continue to be encouraged.

Themes such as IPv6 and cybersecurity were agreed for 2016, and there was strong support for a potential BPF on Internet governance and corruption, pending a formal proposal. And it

was decided that the overarching theme/title of the IGF would be 'Internet Governance Forum (IGF) 2016 Enabling Inclusive and Sustainable Growth'.

The meeting also noted input from the host country, Mexico, on how it planned to increase the use of technology and social media to help participants navigate and interact at the event, including online.

The second open consultations and MAG meeting was held on 12-14 July 2016 in New York. Here, the UN confirmed that the theme that the MAG proposed for the 2016 IGF, 'Enabling Inclusive and Sustainable Growth', was timely and forward-looking, particularly given the SDG agenda.

There was good news from the IGF secretariat's update on the annual meeting. It had received more than 260 workshop proposals, more than ever, also 46 requests for Open Forums, again the most yet received. Updates were given on the NRIs, BPFs, DCs, and themes such as cybersecurity; for the BFIs it was agreed that increased outreach and a longer-term view is key to the success of the BPFs. It was noted that a new BPF on Anti-Corruption was indeed being launched (although it would be too early to have a session at the 2016 IGF).

The open consultation day heard updates from other related Internet governance initiatives and organizations including Stanford University (Deliberative Poll), World Economic Forum Internet for All Initiative, Global Internet Policy Observatory, NetMundial Initiative, ITU, Friends of the IGF and Access Now. This allowed the MAG to consider where this related work might be integrated into the annual meeting program.

At the MAG meeting, Mexico committed to work with the MAG to bring in as many newcomers, high-level participants, youth, and other under-represented groups to the annual meeting. It was also reported that a high-level meeting or substantive session would be organized by Mexico and that all stakeholders would be invited to join.

Workshops comprise by far the most numerous of the sessions at the IGF annual meeting, and much of the MAG's time was spent on discussing the workshop evaluation provided in advance. Workshops are selected on their evaluation scores and with an aim to have a balanced (thematically and regionally, with diverse stakeholder participation) inclusive program which encourages participation of newcomers to the IGF and stakeholders from developing and least-developed countries. Other sessions such as Open Forums and meetings of IGF Dynamic Coalitions, among others, were also taken into account in this regard.

The MAG also set up a working group on new session formats in mid-2016 to advocate for the introduction of new session types at the IGF – namely lightning talks and 'unconference', which have become popular in other venues. Lightning and unconference sessions were successfully held for the first time on an experimental basis at IGF 2016. Lightning session are 20 events that are quicker, more informal versions of full-length workshops or presentations; unconference sessions are talks that are not pre-scheduled – participants reserve a speaking slot by signing up on a scheduling board on a first-come, first-served basis.

There was also a lengthy discussion about the main sessions for the 2016 IGF. The MAG was reminded that these sessions are the only ones that are translated into all 6 UN languages, and therefore should be highlighted appropriately in the program. They are also traditionally held in the biggest meeting room.

To confirm the main sessions, the MAG held a virtual meeting on 25 August, in line with the established main session guidelines. It was emphasized that all main sessions should be inclusive of those participating online and through remote hubs, and should be forward

looking and seek to produce outputs that could feed, if possible, into other relevant Internet governance processes and forums after the annual meeting.

11th IGF CHAIR'S SUMMARY

Executive Summary

The 11th IGF marked the first gathering of the global multistakeholder community since the renewal of the IGF's mandate for 10 years by the United Nations (UN) General Assembly at the WSIS+10 High Level Event[1] last year. With the meeting theme of 'Enabling Inclusive and Sustainable Growth', the IGF meeting was a platform for engaged and informed discussions about, among many other things, how the Internet can support and help to enable sustainable growth as envisaged by the [2030 Agenda for Sustainable Development](.).

In the course of four days, more than 2,000 delegates[2] from 123 countries participated in about 200 sessions, with thousands more engaging online. The programme was developed in a bottom-up and inclusive manner in consultation with the growing IGF community, with a view to enhancing wide-ranging and diverse multistakeholder participation. The busy and productive meeting featured interactive dialogue and debate, and addressed a broad range of themes and issues including:

- The Internet and sustainable development
- Access and diversity
- Youth and gender challenges pertaining to the Internet
- The protection and promotion of human rights online
- Cybersecurity
- The need to enhance multistakeholder cooperation
- Critical Internet resources
- Internet governance capacity-building.
- Other emerging issues that may affect the future of the open Internet.

The IGF is unique in that it is [convened by the UN Secretary-General](.) to be an open, multistakeholder forum bringing all stakeholders together as equals. Its UN mandate gives it convening power and the authority to serve as a neutral space for all stakeholders. As the community embarked on the second decade of the IGF, exchanges throughout the week recognised the important contribution the Internet makes in promoting social inclusion and economic growth. The importance of the Internet and its governance as a powerful tool to promote social inclusion and economic growth using transparent and inclusive multistakeholder approaches are clear.

IGF11 Highlights

Many sessions throughout the week provided the community with spaces to explore the important question of how to harness renewed global interest in increasing access to the Internet in a way that supports development efforts in line with the Sustainable Development Goals (SDGs). Participants reiterated that digital literacy and the development of local and culturally diverse and relevant content are fundamental for inclusive growth. An emerging consensus has developed among the IGF community that the Internet's core values of openness, freedom, resilience, safety and decentralisation are fundamental for enabling inclusive and sustainable growth – as also expressed by UNESCO's Internet Universality framework.[3]

Many delegates emphasised that international cooperation and strategic partnerships cultivated through the IGF can help bridge digital divides and provide new opportunities for people living in poverty, women and girls, children, disabled people, older people, indigenous

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peoples, marginalised groups, and rural communities that still lack acceptable access to the Internet and to and training in the use of ICTs.

The IGF has remained a critical platform to facilitate dialogue on human rights and their connections with Internet policy and governance; discussions about the importance of human rights on the Internet have similarly become increasingly prominent at the IGF. In 2016, increased attention was also paid to the importance of civil and political rights – including the ways in which the promotion and protection of these rights can support sustainable development.

The successful transition of the IANA functions[4] to the multistakeholder community in October 2016 marks an important milestone for the Internet governance community. The transition was finalised after many months of careful planning by community volunteers, leading to productive exchanges about the post-transition IANA and the new community-based accountability mechanisms to ensure transparent and stable management of this crucial Internet function. At the IGF, various workshops and sessions endeavoured to learn from the successes and challenges of this multistakeholder exercise.

A number of sessions addressed the growing challenges stemming from increased use of the Internet around the world, along with the ways in which such use may threaten the security and development benefits of the Internet. Stakeholders stressed the need for cybersecurity measures to be implemented in cooperation with all stakeholders and international expert bodies, with the IGF providing a space for such collaborative efforts. Security professionals, law enforcement agencies, programmers and business people, among others, have to work together to address new threats and challenges to online security for both individuals and organisations. Cyberattacks, cybercrime and issues related to privacy and surveillance are challenges that require urgent collaboration and cooperation as well.

In the Internet's tradition of allowing for unlimited creation of new opportunities, the Internet of Things (IoT) and artificial intelligence have the potential to bring about ground-breaking benefits to mankind and our quality of life. The challenge is to foster this continuous development and to enable the IoT to further grow into the Internet and Internet governance processes. Issues such as standardisation, interoperability and security are similar to issues the Internet community dealt with in its earlier days, and offer substantial opportunities for multistakeholder cooperation and mutual learning. Internet and trade also featured prominently as many participants said that trade, as well as copyright, intellectual property and data protection, will be central aspects of Internet governance.

National, Regional and Youth IGFs (NRIs) have been emerging since the IGF was convened in 2006. They are independent in their work, and organised in accordance with the core IGF principles of being multistakeholder, bottom-up, inclusive, open, transparent and non-commercial. The NRI network has nearly doubled since the 10th IGF; growing from 37 NRIs at the end of 2015 to more than 70 recognised NRIs.[5] The NRIs are active and immensely useful contributors to the IGF community's intersessional activities. The linkages between the NRIs and the global IGF have increased significantly thanks to many joint work activities such as the organisation of sessions held during the 11th IGF, collaborative work on developing publications containing guidelines, and best practices on how to establish and run an NRI. Records from the NRIs' regular fortnightly meetings[6] also serve as inputs to the global IGF, providing more local and issue- specific perspectives to policy challenges.

In 2016, the IGF furthered its work on Policy options for connecting and enabling the next billion(s). The intersessional initiative focused on local and regional specifics to enable

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[4] https://www.icann.org/news/announcement-2016-10-01-en
[5] NRIs information is on the IGF website
[6] Meeting summary reports: https://www.intgovforum.org/multilingual/content/coordination-meetings

meaningful access and also investigated how ensuring meaningful Internet access can support the SDGs. CENB Phase II[7] builds on the IGF community's work on this topic in 2015 (Phase I). Together, over 120 contributions from a diversity of stakeholders are reflected in this initiative, which helps to illustrate the need for not only enabling more people to access the Internet, but also for them to benefit from and be empowered by its developmental potential.

The IGF Best Practice Forums (BPFs) continue to offer unique platforms to investigate topical Internet policy challenges by collecting community input and experiences in a flexible and bottom-up manner. The BPFs gather knowledge that exists with different groups, organisations, experts and individuals to make it available as a resource for the broader community in the form of best practice outcome documents.[8] Through their outreach efforts and continued calls for contributions, the BPFs enabled more diverse and varied participation in IGF processes, including from a wider variety of regions and stakeholder groups. By continuously involving new people in their work, the various BPFs also contributed to enlarging the global footprint of the IGF. As a part of the 2016 community intersessional activities, the third cycle of BPFs focused on Gender and Access, Understanding the Commercial and Economic Incentives behind a Successful IPv6 Deployment, Contributing to the success and continued development of Internet exchange points (IXPs), and Building Confidence and Security in the use of Information and Communications Technologies (ICTs) through Enhanced Cooperation and Collaboration. BPFs worked throughout the year in an open and inclusive way via open mailing lists, regular virtual meetings and BPF workshops during the 11th IGF meeting.

Using their first-ever shared main session at IGF 2015 as a starting point, IGF Dynamic Coalitions held regularly monthly meetings and coordinated closely before IGF 2016. Over the course of the year, DCs have made significant progress toward synchronising their work and adopting fundamental common standards of transparency and inclusiveness (open archives, open membership, open mailing lists), and have developed targets and deadlines for the publication of papers. They have also jointly participated for the second time in a survey to gather feedback on their papers. While there are currently 16 DCs, the community of DCs is also growing: two new coalitions, on Community Connectivity and Innovative Approaches to Connecting the Unconnected emerged in 2016. Several more have recommitted to their activities, notably the coalitions on Internet and Climate Change and the Youth Coalition. Other groups, on defining 'publicness' in the digital age and on schools on Internet governance, are in an exploratory phase and have expressed interest in launching DCs of their own.

The participation of Governments and policymakers has increased significantly this year, with far more open forum sessions held than in any previous IGF. Organisers of these 32 open forums[9] – a session type traditionally reserved for governments, IGOs and international organisations – included the governments of China, Cuba, Egypt, Germany, Indonesia, Japan and Mexico, as well as the African Union, European Commission, Organisation of American States (OAS), OECD, ITU and UNESCO, among others. A delegation of 12 members of the European Parliament, the largest ever to come to an IGF, was also in attendance.

The IGF brought together a number of UN and intergovernmental organisations as organisers of Day 0 events, open forums, and workshops. Over the course of the week, the World Intellectual Property Organisation (WIPO), which participated in the meeting, the ITU, UNESCO, the office of the UN Special Rapporteur on Freedom of Expression, the World Bank, and the OECD all held or co-organised sessions. As an indicator of the expanding relevance of Internet governance in diverse policy areas, for the first time UN Women and UNICEF also

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[7] https://www.intgovforum.org/multilingual/content/policy-options-for-connecting-and-enabling-the-next- billions-phase-ii

[8] https://www.intgovforum.org/review/2016-igf-best-practice-forums-bpfs-draft-outputs-as-of-2-november

[9] https://www.intgovforum.org/multilingual/content/igf-2016-open-forums

organised IGF events - on SDG 5 and the use of ICTs by women, and children's rights research, respectively.

WIPO's participation in the 11th IGF again demonstrated the numerous areas of convergence between intellectual property (IP) and Internet governance. A balanced and well-functioning IP system contributes to inclusive and sustainable growth on the Internet by providing guarantees and incentives for innovation to take place and for creators to flourish.

The World Economic Forum (WEF) made significant contributions to the meeting. It participated in a main session on the IGF's intersessional activities, and held both a Day 0 event and open forum on connectivity, which brought in a number of partners including the Institute of Electrical and Electronics Engineers (IEEE), Global Connect, and the Alliance for Affordable Internet, as part of its ongoing Internet for All initiative.

To help orient first-time participants to the IGF and help them understand the organisational processes, as well as to foster their integration into the IGF community, a set of continuous activities throughout the 2016 programme was developed under the Newcomers track[10] by the MAG and the IGF Secretariat. Communication with new IGF participants will be continued between sessions through a IGF newcomers mailing list.[11]

For the first time in the IGF workshop proposal process, proposers were invited to define their workshops with thematic tags, including write-in tags of their own choosing.[12] As part of an approach to structuring the programme in a bottom-up way, the most popular tags were used to determine the sub-themes for the 2016 meeting. This saw the inclusion of youth issues and sustainable development as new sub-themes. Although they did not constitute their own themes, tags on trade, digital literacy and connecting the unconnected were also frequently used and were some of the most discussed issues in workshops.

IGF11 also introduced new session types in the programme, including lightning and 'unconference' sessions.[13] The experimental session formats provided an opportunity to engage with IGF participants, in particular young people, within informal, lively settings. The 20-minute lighting sessions proved to be very popular. Held every day of the meeting during the lunch breaks, in a communal and central outdoor area of the venue, the sessions covered topics as varied as broadband affordability, Internet governance challenges in the Middle East and North Africa, the accountability of algorithms, and access to knowledge and culture online. 'Unconference', in which participants proposed topics for presentation and discussion on a communal board, gave space to unplanned sessions on digital violence, African Internet rights, and free trade and Internet governance in Latin America.

The IGF Village[14] included a record number of stands, with 40 exhibitors (twice as many as 2015). It gave exhibitors from across the stakeholder spectrum the opportunity to advance their work, and network and create partnerships among the IGF's participants.

Opening Ceremony and Opening Session

"Indeed, the Internet and information and communication technologies (ICTs) can play an important, enabling role in our efforts to fulfil the great promise of the 2030 Agenda for Sustainable Development," stated UN Assistant Secretary-General Lenni Montiel in a message from UN Secretary-General Ban Ki-moon at the opening ceremony. Noting that ICTs can deliver smart solutions to address climate change, hunger, poverty, women's empowerment

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[10] https://www.intgovforum.org/multilingual/content/igf-newcomers-track
[11] Mailing list: igfnewcomers@intgovforum.org
[12] https://www.intgovforum.org/multilingual/content/igf-2016-faqs-on-workshop-and-open-forum- proposals
[13] https://www.intgovforum.org/multilingual/content/new-session-formats-at-igf-2016
[14] https://www.intgovforum.org/multilingual/content/igf-village

and more, the Secretary-General's statement urged delegates to keep working to ensure universal access to a more open information society.

Ensuring equitable access is one of the main challenges of modern society, said Miguel Ruiz Caban□as, Undersecretary for Multilateral Affairs and Human Rights at the Ministry of Foreign Affairs of Mexico, who added his strong support for the 17 SDGs. "We are truly pleased that this event will foster the enabling of sustainable and inclusive growth and fight climate change with cross-cutting policies that contribute to access and use of the Internet."

Alejandra Lagunes, Coordinator of the National Digital Strategy of Mexico and Chairperson of the 2016 IGF, said, "Clearly we need to build on our points of agreement and exchange of ideas so that we can make the most of all of the potential of the Internet."

Local authorities and other speakers at the opening ceremony echoed the call for an open and universally accessible Internet while emphasising the importance of net neutrality and more international coordination on cybersecurity issues. As IGF11 was the first since the 10-year renewal by the UN General Assembly in 2015, speakers emphasised the importance of the multistakeholder platform for public policy dialogue.

Main Sessions

Assessing the role of Internet governance in the Sustainable Development Goals (SDGs)

This session was timely as it took place in the first year that the global community began implementing the Agenda for Sustainable Development. The need to enable the SDG goals and targets to become real and lasting tools for change was stressed by UN Assistant Secretary-General Lenni Montiel, who also noted that the Internet and ICTs provide reasons for being immensely optimistic about the Internet governance community's ability to support and enable sustainable development.

The session had a 'town hall consultation' with dialogue between expert 'setting the scene' speakers and participants attending the session and engaged online. Panellists noted the importance of transparent and inclusive multistakeholder approaches to sustainable development, including the significant role that the IGF can continue to play in facilitating debates with diverse stakeholders such as those from the development community, in supporting the 17 SDGs. The need to address the challenges women, youth, and older and disabled people face in sustainable development was also emphasised.

Panellists noted that in ensuring that the Internet and other ICTs do in fact support sustainable development, it remains vital to put people first, not technology.

Sustainable development, Internet and inclusive growth

This second main session on the sustainable development had three major themes – inclusion, capacity-building and content. In his opening remarks Lenni Montiel, called on the IGF community to play its important role: all three pillars of the SDGs need the Internet.

Connecting women, youth and disabled people is important, but the real target is to empower people – to bring them into the Internet governance processes and ultimately give them ownership of their Internet.

Only a holistic approach to capacity building – access alone is not sufficient – can fully embrace the opportunities created by the changing technologies. All stakeholders need to keep an open mind, cooperate and create partnerships to invest in capacities on the demand and supply side. Trust is an important factor as is an enlightened regulatory and policy environment.

Both content and services need to be relevant for local users – they lead to more users and growth of the Internet. Creation of relevant content in local languages and the development of skills to put content online and develop services require investment but also create opportunities to earn money, for example when such content and services become globally available. Governments bear a crucial responsibility as they can act as facilitators or obstacles.

National and Regional IGFs (NRIs)

For the first time, the NRIs organised a main session where IGF initiatives from 41 countries and regions, including three Youth IGFs, were represented. The objective of this session was to raise the visibility of IGF initiatives, and to illustrate the differences that exist across countries and regions concerning Internet governance issues.
The session was divided into two segments. The first part showcased the different approaches to the broader issues of Internet governance. Topics discussed were access and enhancing opportunities for the unconnected and underconnected, and secure, resilient and trusted Internet from the NRIs' perspectives. The second segment discussed the main challenges the NRIs are facing in their work. The session clearly illustrated that issues and challenges faced by the NRIs are different across countries and regions, further emphasising the importance of increased engagement between the IGF community and the NRIs.

Human Rights: Broadening the Conversation

The main session on human rights focused on three major dimensions, namely civil and political rights; economic, social and cultural rights (ESCRs); and the ways in which these rights are inherently related. Moderators introduced the overall framing for the session, and engaged discussants and participants on the interconnection between civil and political rights on one hand, and ESCRs on the other.
Stakeholders stressed the importance of a multistakeholder approach to addressing challenges concerning online human rights. The session demonstrated that there are a variety of ways to engage on ESCRs and other human rights and that the IGF is becoming an increasingly important platform to discuss these broad issues, and what policy actions are needed and how the IGF community can help to ensure that the Internet is used to enable sustainable development and to promote human rights globally.

IGF Dynamic Coalitions

Dynamic coalitions (DCs) are grassroots, multistakeholder IGF groups, the first of which emerged in 2006 at the Athens IGF, and in which individuals and organisations come together on particular issues. Traditionally defined by their independent nature and internal procedures, a process to coordinate DCs and better integrate them into the main IGF programme has taken place. In 2015, DCs held a main session together for the first time. Building on that success, they agreed to come together again at IGF 2016 to demonstrate the value of their work and engage with participants.
Closer collaboration among DCs was evident at IGF11 – the DCs devised a format in which each of their speakers would be questioned by a moderator in a challenging way. Acting as an 'agent provocateur' and moving around the panel of DC speakers, the moderator prompted DCs into a defence or explanation of the ideas and assumptions in their work.
True to the spirit of coalitions, this brought dynamism to the session and helped to highlight the varied issues covered by the 12 participating DCs:
- Accessibility and disability
- Blockchain technologies
- Child online safety
- Community connectivity
- Core Internet values
- Gender and Internet governance
- Innovative approaches to connecting the unconnected
- Internet and climate change
- Internet of Things
- Net neutrality

- Public access in libraries and Internet rights and principles.

Trade Agreements and the Internet

For the first time, a main session was held on trade policy and the Internet, which reflected the growing importance of trade issues, including domain name dispute resolution and access to registrant data, the use of encryption standards and source code disclosure mandates, and cross-border information flows. The session complemented the dialogues taking place in forums such as the WTO and in trade agreements such as the Trans-Pacific Partnership (TPP), Trade in Services Agreement (TISA), Trans-Atlantic Trade and Investment Partnership (TTIP), and Regional Comprehensive Economic Partnership (RCEP).

It was emphasised that there is a need to ensure that discussions on trade policy are not isolated from broader multistakeholder discussions of those same topics – in particular, because national trade ministries and trade negotiators do not always perceive these as being Internet governance issues, but view them simply as trade issues.

Speakers emphasised that trade agreements have a history of involving governments, citizens and private sector actors in actions which can be beneficial to the economy in a wider perspective but may result in harming core values, principles and rights for the Internet. Openness and transparency in trade agreements is needed with civil society actors participating in these debates. Governments in the private sector realise that trade agreements need to involve a dialogue with civil society. At the same time; however, it was noted that negotiations with government experts are often facilitated through specialised spaces which may not always be accessible to the general public.

IGF Best Practice Forums (BPFs) and Policy Options for Enabling and Connecting the Next Billion(s)

This session presented the outputs of the 2016 IGF stakeholder-driven Best Practice Forums (BPFs) on IXPs, IPv6, Gender and Access, and Cybersecurity, and showcased the outcome of Phase II of the IGF's work on policy options for connecting the next billion(s). The session highlighted that these community activities have resulted in resources from which policymakers can draw when addressing Internet policy issues. The session also gathered community suggestions on how these outputs may be taken forward into other relevant Internet governance forums and how the IGF community's work between sessions could be enhanced looking ahead to 2017 and beyond.

Shaping the Future of Internet Governance: An open dialogue between pioneers and young leaders

This main session was designed to provoke a conversation between different generations about the state of art of the Internet ecosystem, proposing a future agenda for this environment. Newcomers and younger generations engaged in a dialogue with historical Internet actors debating Internet governance challenges and nurturing an exchange of experiences and ideas on various issues before the Internet community.

Throughout the session it was emphasised that the Internet governance community should provide education and capacity building opportunities for young people. Some highlighted the need for formal school/university training while others said that immersion of young people in the field work was most important as this would give young leaders more legitimacy when it came time to influence real policy and decisions in the complex and always changing Internet governance field.

Other important points raised were the need for actions to improve general awareness of Internet governance, particularly at local and regional levels; the issue of parental control and parental education in the context of discussions about child protection and content blocking, and the need for more youth participation in various spaces related to Internet governance.

Taking Stock: Emerging issues – future of the IGF and IGF retreat consultation

The traditional 'taking stock' session held in the afternoon of the last day allowed all participants in an open microphone format to reflect on their experience at the meeting; raise emerging issues that they wanted the IGF to address in 2017, and suggest ways for the IGF to improve. This year the session also sought further consultation from the community on the proceedings, ideas and suggestions from the IGF Retreat held in July 2016. The proceedings document is available for review on the IGF website.

DETAILED MAIN SESSION REPORTS

Assessing the Role of Internet Governance in the Sustainable Development Goals

Victor Lagunes, Office of the President, Mexico, in introducing the session, said it is a topic being addressed in Mexico, and "the debate is growing... The different groups that are part of the ecosystem are reaching out to each other, the debate has been candid and this is the kind of debate that we didn't have two, three years ago." He noted that a regional forum on sustainable development had recently been set up by the Economic Commission for Latin America and the Caribbean (ECLAC). "Our interest is clear: to strengthen our activities locally but also we are interested in working in the long run to support a multistakeholder environment."

Co-moderator, ambassador Benedicto Fonseca, chair of the Working Group on Enhanced Cooperation of the United Nations Commission on Science and Technology for Development, said his country, Brazil, is a firm and enthusiastic supporter of actions that "really prove the Internet governance ecosystem" and "we are firmly attached to the implementation of the Sustainable Development Goals (SDGs)". The other co-moderator, Karen McCabe, senior director at the IEEE, explained that the session was to be both co-moderated and an open consultation among stakeholder groups.

The first presentation was made by Lenni Montiel, Assistant Secretary-General for Economic Development in the UN's Department of Economic and Social Affairs. "As a UN official representing the Secretary-General I cannot think of a better topic to kick off the discussion than the topic of this session. In September, we celebrated the first anniversary of the adoption of the 2030 Agenda for Sustainable Development... with its 17 goals and 169 targets. Our challenge now is to turn the goals and targets into real and lasting change in people's lives. Our motto is 'leaving no one behind'. Internet and ICTs are why we can be optimistic that we can reach the bold transformations required by the SDGs."

He highlighted target 9C of the SDGs, which calls for significantly increasing access to ICT and providing universal and affordable access to the Internet in least developed countries by 2020. "The Internet can help ensure equitable, effective public services for all, particularly for the poorest, most vulnerable. ICTs and Internet bring breakthrough advances for health, education; they can enhance public accountability; they can promote participation for more inclusive societies; they can promote policy integration. We have made remarkable progress in the past 10 years in spreading the benefits of ICTs."

Lack of access to technology, poverty and inequality prevent people from fully taking advantage of the potential of Internet, he added. At the end of 2016, 53% of the world's population, 3.9 billion people, did not have access to the Internet. In the 48 least developed countries, which comprise 12% of the world's population, only about 1 in 7 people were online by the end of 2016. In the majority of the world's poorest countries, broadband remains unaffordable; the global Internet user gender gap is even increasing. Many people cannot use the Internet because they lack the necessary skills or there is insufficient content in their native language.

To overcome the challenges, as stated at WSIS+10, "we need to ask ourselves what are the critical next steps that all stakeholders should take if we are to reach the target of universal access to the Internet and close digital divides. We need to think of bold new steps to rally all actors to put the Internet in the service of the poor, women, disabled people and indigenous populations. There is much we can achieve with the best brains of the ICT industry and society working to make affordable Internet access available."

Megan Richards, principal advisor at DG Connect, European Commission, spoke about initiatives in Europe, how they have implications for the rest of the world and how Internet governance can be brought into that context. "In Europe we have huge activity going on to try to improve and establish a digital single market... It addresses many of the goals of the SDGs, and we're trying to use ICTs and information based innovation and research to make sure that those goals are addressed in an efficient, sustainable and ecologically ethical way."

She asked why others should be interested in Europe's digital single market. "It is to make Europe a better trading partner, a better global citizen and to have better access and exchanges with the world... Second, Europe, and the European Union in particular, is the primary aid donor in the world. We have been over the last few years trying to integrate digital technologies in our development assistance programme and in the last few weeks we have now even clearer commitments on how to achieve this. When Europe provides development assistance, it works very closely with the recipient countries... but we want to make sure that the digital technology elements of achieving the SDGs are integrated into those activities as well."

The Internet governance model is a very good one we can use to expand to the application of the SDGs, she said, and called on all to map even better the way in which multistakeholder approaches could be used to help achieve the SDGs.

Daniel Sepulveda, then Deputy Assistant Secretary, US State Department, said the US believes the Internet and multistakeholder model of governance are natural partners for the fulfilment of the SDGs. "We believe that because the fulfilment of those goals will have to lean heavily on public-private partnerships, it will need to welcome the commitments and expertise of non-governmental stakeholders and will need to encourage the participation of all people, including those most impacted by the decisions we make as a whole. Really this is the only way to ensure that the SDGs are reachable; no single sector will be able to achieve them alone."

He said that just as the 2030 agenda is moving from commitments to action, so should the Internet community to ensure that we remain committed to action, not just international agreements and discussion. Reaffirmation of the multistakeholder model by the UN General Assembly at WSIS+10 and the stewardship transition this year "were to our minds historic achievements... We must now ensure that those and the many other Internet governance processes meet the process of transparency and accountability where more stakeholders from the developing world have a seat at the table, where we focus on advancing a global Internet and lowering the digital divides that remain within and between countries, including the gender divide, and where we as a community remain unwavering in our commitment to the protection of human rights."

The multistakeholder model has facilitated significant accomplishments over the past decade, he added, and "we should appreciate these by promoting expansion of access to the Internet and digital tools for the development that they contain. This access and these tools directly support the achievement of the SDGs." This includes decreasing the number of people living on less than $1.25 a day by a third; eliminating hunger such as with smart agriculture – using satellite monitoring and Internet enabled automation to increase crop yields; and bio sensors will make healthcare accessible and affordable giving an additional 1.6 billion people access to healthcare by 2030. "Almost all of the goals have examples like these where you can point out how connectivity will help us reach those goals... We believe that connecting people to the global network and ensuring they have the skills and the freedom to use connectivity productively is our highest mission. We also cannot afford to deny that the challenge is disproportionately real for women and disenfranchised communities. Governments will not solve these problems alone or by centralising direction and control. We live in an age where the key ingredients for innovation and growth are cooperation and collaboration."

Doreen Bogdan, chief of the ITU's strategic planning and membership department, told the audience that the "catalytic power of ICTs for the achievement of each of the goals will not be fulfilled until we have universal and affordable access to ICTs and the Internet. As the UN Secretary-General special adviser on SDGs said to the ITU council, if we fail to address the digital divide the 2030 agenda will not succeed. Every one of the goals provides a compelling reason to achieve universal affordable connectivity and there is a clear, tactical roadmap within the SDG agenda that compels us to do so and is our guiding way. If we can create effective multistakeholder partnerships as we're called to do so in goal 17 we will succeed in achieving all of the specific ICT targets, targets which have been agreed by both the developed and developing world. We need to especially focus on goal 9C, universal, affordable access to the Internet for least developed countries by 2020 – not 2030, but by 2020."

While this goal may be aspirational, it is not impossible with the right mix of human will, strategic multistakeholder partnerships and technological innovation, she said, highlighting several examples:

- Goal one, ending poverty: Edema lives in Mali and he is financially included thanks to his 2G phone and receives regular messages from the agricultural information service and so is able to stay up to date on the latest market data and knows the best time to harvest and sell his crops
- Goal 2, zero hunger: Leboni is one of thousands of smarter farmers in Bangladesh. When she calls 16123, a free call, from any operator in Bangladesh, she gets access to real-time agricultural information and knowledge helping her to farm smarter and increase productivity
- Goal 3, health and wellbeing: Naki's 2G phone is helping her to take care of her unborn child. Mobile phones are ensuring that Naki and thousands of pregnant women in Ghana get healthcare for themselves and for their new babies (and is similar to an initiative in Mexico that is also helping pregnant women and new mothers)
- Goal 4, education: In a junior school in Nigeria, an e-learning classroom, equipped with a laptop, Internet modem, projector and screen, pupils get access to educational resources from around the world. There are 60 million children of primary school age not attending school and 26 million teachers are needed – ICTs can help fill that gap
- Goal 5, gender: Angelica was a street sweeper and now she's a web entrepreneur. She is one of more than previously unskilled women who have been benefiting from the ITU and the telecenter.org digital literacy campaign. There are now hundreds of initiatives focusing on ensuring equal participation of women and girls in digital technologies. The ITU together with UN Women has launched a multistakeholder initiative called Equals, which is a global partnership for bridging the digital gender divide, and presented in an [open forum](#) at IGF11.

"As Vint Cerf noted yesterday, we have unfinished business to do. Unfinished business to connect the unconnected. We need to join forces to get the business done. I will close by reiterating a message that David Navarro conveyed to the 2016 council session of the ITU: the new development agenda is universal, indivisible, and must leave no one behind. We must address the digital divide or we will not succeed. We don't have a plan B for the future."

Patrick Ho Chi Ping, deputy chair and secretary general of the China Energy Fund Committee, said the rapid development of ICT has ushered us into the fourth industrial revolution. "Our lives and societies are increasingly interwoven by a single man-made system, the Internet. This new system has brought about much good but has presented new challenges. As with revolutions past, we are now seeing rising tension between those advancing the new technology and those being left behind by it." Recognising this, he reiterated that under SDG 9 there is a target to provide least developed countries with universal, affordable access to the Internet by 2020. "Construction and expansion of Internet infrastructure including fibre optic lines and routers are critical to achieving the target. Current estimates show that the world

will need at least $10 trillion in investment for ICT infrastructure by 2030. In the meantime, we see chronic underinvestment with gaps of hundreds of billions of dollars in the infrastructure."

Fortunately, there are promising signs of some countries rising to the challenge, he said. Infrastructure development including the Internet is one of the key elements of China's initiative that aims to provide regional connectivity and bridge all kinds of divides. But no nation can succeed alone in bridging the divide. "We should renew our call for infrastructure development for the Internet," he said, adding that: "We should always remember that new technologies, however remarkable they may seem, are fundamentally tools made by people for people. Innovation and technology must put people first – only in this way can they truly propel us to sustainable growth and inclusive development."

David Souter, ict Development Associates, picked up on the point of putting people first, not technology, and spoke from his perspective of working at the interface between development and the information society. "We have to acknowledge there is a paradigm gap between the Internet and sustainable development... many practitioners are not persuaded yet that the Internet is as important for development as many of us think it is here. The starting point in addressing this should be the human development problems that are fundamental to sustainable development... and are rooted in structural issues of economic resources, and poverty and inequality – economic power structures... The Internet will contribute substantially to addressing them but it can't resolve them on its own; it is a part of the SDG story.

"I think if we here in the Internet community are going to contribute as substantially as we should we need a deeper understanding of the challenges of development and why they have proved so intractable." Particularly, he added, we need to understand why least developed countries seem to be falling behind in both development and ICT indicators.

He noted that the SDGs are set for the next 15 years, but the context within which they will be implemented will change politically, economically, socially, culturally and environmentally over that time and the technologies of today will be different in 15 years' time. "The information society is a process of change and we need to consider the adaptiveness of societies to our technologies... There are three main areas where ICTs and the Internet will be significant for sustainable development. The first of these I think is most important but tends to be emphasised less concerns underlying changes happening in economy, societies and cultures as a result of the Internet – systematic changes in how societies and economies work and how things are done by governments, businesses, citizens. These are very important today and they're growing in importance and they will have a profound effect in the next 15 years."

The second area is the projects and programmes which make use of the Internet to support development goals and the third is about monitoring and measuring development outcomes: "There are high hopes for big data and challenges in ensuring that big data analysis does not overemphasise the impacts on those that generate most data rather than those who are in most need."

Souter added: "I think we need to learn more from what's been happening. This year's World Development Report from the World Bank is the most comprehensive assessment we have of digital dividends and it is positive about the role of Internet in facilitating development, but points out that those with money, resources and capabilities are better placed to gain from the Internet than those twho don't. The bank feels that in many countries the Internet has disproportionately benefited elites and it sets out clearly that the potential of ICT has not been realised over the last decade at the pace that had been hoped and we need more analysis on why that is so."

We need to listen more to those who work in development, he said. "Here I have a suggestion: if we repeat this session next year I suggest we have a panel of development practitioners, people whose expertise is in poverty reduction, gender equality, health, education and others, asking them to help us to respond to the development challenges which they identify as their priorities."

Peter Major, acting chair of the UN Commission of Science and Technology for Development, reminded the audience that the original goal of WSIS is for a people-centred information society. "Keeping in mind the name of the commission I'm chairing, I think science should also mean social science, and I will encourage the commission in its future work to concentrate on this issue."
He added that in the Commission there is now a multistakeholder working group, and he said that he was pleased to see that the recommendations from this group are being implemented and he would encourage the Commission to concentrate on the issues brought up at this IGF session.

The session continued by looking at the SDGs from the perspectives of four stakeholder communities: business, civil society/academia, government/NGOs, and technical. Points made by speakers from the floor included the following.

Business

- Countries need to review policy guidelines and regulatory frameworks to better address poverty, and the affordability of Internet access in particular. One government in Africa wanted to increase the price of data access but because of awareness among a stakeholder group there was push back. "In Africa, if the government doesn't move, nothing really moves," said one intervention from the business sector.

- Large companies already understand the value of ICTs and the Internet. They can be involved as disciples in helping to educate government officials in why it is important to have broadband access.

- With many young people entering the workforce in developing countries, making sustainable change for poverty, health, education and other goals will need jobs to provide resources for families and communities.

- With much of the focus of the Internet of Things on applications such as driverless cars it is important to also highlight applications such as those that can help provide affordable healthcare to low income people. ICT can also be an enabler for energy distribution. We should encourage the innovation and commercial adoption of these ICT applications.

Civil society

- Concern was expressed about the marginalisation of labour and deregulation in the 'gig economy', which has affected regular, stable jobs in the US and around the world. This has to be addressed.

- The position of Facebook with its free service, Internet.org, was raised as a serious threat to privatise the Internet.

- Solidarity was expressed with teachers fighting privatization and the use of the Internet in schools where computers are replacing teachers.

- It was reiterated that people should be at the centre of governance of the information society, in line with the principles of WSIS, rather than thinking of Internet governance as a technical approach. Further, we have to focus on generating an interface between people, not just between human beings and machines, to build an informed citizenry that can make decisions in a global context. A view was expressed that we are missing the perspective of the people who need development work and a framework is needed "that helps us to connect more deeply".

- Connecting the next billion is a key value that informs conferences around the world.

- The humanitarian role of public libraries was highlighted.

- Corruption, and lack of transparency and good government, hinder the achievement of the SDGs.

- Effective multistakeholder institutions are needed to guarantee values like universal and democratic access to the Internet and to knowledge, and to avoid Internet governance being driven by markets and the interests of governments.

- Discussion needs to be stepped up on the future of work and the concept of universal income, given that many jobs may not exist in the future owing to automation.

- Public-private partnerships and local stakeholder groups are needed for projects such as extending the Internet to remote areas in countries.

- Families often do not have digital skills, and local neighborhood trainers are needed.

- There was a view that the IGF is a UN organised event and there are still countries that are not UN members and are too isolated. One minister of ICT (in an unnamed country) was said not to know what the IGF is about.

- A large part of Internet governance remains in the hands of private companies and other non-state actors because they control some critical parts of the Internet infrastructure, and "users are left with vague notions of how the Internet is regulated and governed" and a lack of awareness "of the serious stakes at play over issues of privacy, security, freedom of speech. The engagement, education and empowerment of users should be a fundamental objective of the IGF, especially the national and regional IGFs."

Government

- Infrastructure, especially in the developing world, is critical to realising the SDGs, but governments need support as some have many responsibilities that can distract from critical issues like Internet governance. A mechanism that can specifically address Internet infrastructure issues would help. Governments should also consider open data policies that will also help address Internet infrastructure.

- People do not just need affordable access but also the education they need to take advantage of the benefits that the Internet offers.

- We need to have people from the development sector because ICT is a tool, not the end in itself. We need people who are working on problems related to development and then with ICTs we can solve them. For example, working with people with disabilities to find solutions using ICTs.

- There is a need for more awareness of the SDGs.

- We have to bring some of the sectors within our communities to the IGF, such as the health sector, to show us how they are using the Internet and what challenges they are facing.

- Innovation is a powerful driver for ICT and economic development and to meet the SDGs. China's 'Internet Plus' action plan was given as a good example.

- Affordability of data on the Internet is a major concern in some countries and will greatly hinder its reach to communities such as farmers. The Internet should be considered as an enabler not a commercial business alone, and not as a 'luxury', as some governments in Africa feel. (Affordability was echoed across the stakeholder groups – one other said: "You are not going to have significant progress on development goals in countries where people have to spend four times their minimum wage to access the Internet.")

Technical

- Countries such as those in Central Asia, which are landlocked and face environmental and infrastructure challenges, are already working on sustainability and knowledge economy programmes, and have much to offer in cooperation and knowledge sharing.

- We need to include development experts in our thinking and we need to understand what they know that we do not so that we can make joint progress together.

- The content we are developing needs to be relevant to the environment we are developing it for, and concerns that technologies will take away jobs must be addressed.

- There is a need to build human capacity in the development of Internet infrastructure and services around the world. "The difference between a stable, affordable, secure Internet service and one which is none of these things can be simply a matter of the human skills and capacities which are brought to bear in properly designing and operating the services," said one contributor.

- The technical community, as part of the multistakeholder Internet community, has played a big role over many years in assisting education, training, professional development and in non-profit structures.

- E-commerce platforms can help poor and disabled people sell products and foods.

- National governments need to 'buy into' the SDGs – this should not just be an international initiative.

- Governments and research organisations need to publish open data and existing projects need to be publicised, and knowledge shared among stakeholders.

- Continuous monitoring and evaluation is needed on progress towards SDG-related projects.

- We must eliminate the roadblocks that developing countries face in adopting new technologies, and technology transfer is a key enabler.

Summary points

David Souter:

"Are we talking about Internet governance or the Internet in relation to sustainable development? I would say the discussion brought together two very complex issues which have long histories and which have not been linked closely together in the minds of the participants in either, but it is an important task to bring them together to build sustainable development within the way we move forward as an information society.

"Peter Major reminded us that core theme of WSIS was this integration between the information society and the development agenda, and It came up in the introductory comments from the Assistant Secretary-General of UN DESA talking about the state of play, the challenges that are faced in UN systems and among partners in ensuring the SDGs and that no one is left behind."
He added that a lot of discussions around ICTs, and achieving universal access as a part of achieving the SDGs as a whole, are not just about the specific SDG target 9C which refers to it. Integrating digital technology into the implementation of development – integration being really important, and also reiterated by a number of speakers – means that ICT is a tool, not an end. "That is referenced directly in the WSIS Geneva declaration, and human beings are at the core of development challenge we face."

We need to look at development challenges in terms of individual countries and not just see one large mass of development, Souter said. Actually, he added, not much was said about individual SDGs. "Most of the discussion took a cross-cutting view of the role of ICTs in development and I think there is a justification for that – it is that cross-cutting approach that maximises the value that can be leveraged." Some speakers did reference the SDGs on poverty, equality and health, and also e-commerce as used by small producers.

There was a discussion about access to information and knowledge and the development of understanding which will enable people to make better decisions in their own interests. The Internet can pose problems as well as opportunities, such as in the marginalisation of labour and the implications for employment of fewer jobs, casualisation and so forth.

"There was a lot of discussion of that in terms of connectivity, including references to marginalized areas and to broadband. There was also reference to other dimensions of access which are now routinely considered alongside connectivity, including affordability and local content. There was less reference to capabilities… If this was a development community forum there would be much, much more emphasis on the capabilities and skills of people to make use of the Internet. There was also reference to the need for skills and capabilities to relate to the stability and security of the Internet itself."

Different aspects to access were discussed., including infrastructure and the enabling environment for investment and innovation and more generally, open data and open government. Points were made of the need to develop ways to measure progress on the SDGs and on the impact of ICTs, which are not the same thing. Indeed, for continuous monitoring, the scale of the SDG challenge for national statistical systems is very great. Also, there is a need to share research and evidence more widely.
"In the IGF, people refer to the multistakeholder approach, the value of which lies in enabling the better development of consensus and the development of better decisions. But within that, one speaker referred to the importance of supporting governments in their roles. Another aspect of this would be dialogue with the development community… A multistakeholder approach must involve reaching out to and listening to those who have expertise in other areas."

There was a reminder of the importance of users and the role of the IGF in enhancing awareness and understanding of Internet governance.

Souter also reiterated having people from the development community as a panel at the IGF, and the importance of intersessional work, best practice forums, and the role of national IGFs in responding to the SDGs.

Benedicto Fonseca closed the session by saying he was "totally convinced" of the importance of the conversation on the synergies between Internet governance and the SDGs, and anticipated this will be a permanent feature of IGF meetings. "I think it would be very important in future to shape the discussions in a way that will allow us to have conversation that will lead to some kind of tangible output," he said, adding that the working group on IGF improvements has made a recommendation that the IGF should seek such outputs that can be fed into other processes.

Sustainable Development, Internet and Inclusive Growth

Part 1: Sub-session on inclusion (women and youth)

This session posed a number of questions to the speakers and audience for discussion:

- What are the learning needs of different populations (e.g. children, youth, older people, people with disabilities) that will require different approaches to teaching skills related to accessing, using and benefiting from the Internet and ICTs?
- What barriers prevent women from using and fully benefiting from the Internet/ICTs?
- What barriers prevent youth from using and fully benefiting from the Internet/ICTs?
- What barriers prevent other parts of the population from using and fully benefiting from the Internet/ICTs?
- What are examples of specific projects that have overcome barriers to inclusion for women, youth and special populations and what lessons can be learned that can be used to build pragmatic, scalable and replicable models for inclusion?

Yolanda Martínez, head of digital government, Ministry of Public Administration, Mexico, said that digitising government services helps bridge gaps. Mexico and Latin America are very unequal and the only way to bring equality is equal access to government services. She gave the example of a single mother (Lupita) who has government insurance that guarantees that her children can continue to study if she dies, and which is available as an online service. "If Lupita knows how to use a computer to enter the contact data and fill in the form she will have certainty that her kids will attend school."

Raúl Echeberría, Internet Society, Uruguay, highlighted building capacity to use the Internet but this also requires empowering communities. Both go together. The Internet must be relevant for women, and they have to be both technology and content developers. Every Internet Society project has a gender perspective, he said. Regarding youth, what is critical is connecting children, and not only schools, and ISOC is running programmes for including young people in the IGF and other important events.

Gabriela Rocha, executive director, Laboratoria, Mexico, said her organisation empowers young, poor women with access to education, and trains them as web developers. Women are particularly disempowered, with two-thirds not having their own income. The IT industry is the fastest growing and you don't need a university title to become a developer. The programme takes 6 months and women pay for it only after they start earning.

Chuang Liu, Institute of Geography and Natural Resources, China, spoke of the inspiration provided by Qihang Hu, a female pioneer of the Internet who founded the Internet Society of China and changed the country.

Daniel Abadie, Undersecretary of Digital Government, Ministry of Modernisation, Argentina, said there are many organisations and collaborations with the government that are trying to empower children and women in Argentina. It's a challenge as 38% of homes do not have the Internet, 20% of youths between 20 and 29 years of age have not completed high school, and 7 out of 10 do not finish university.

Edmon Chung, CEO, DotASia, Hong Kong, said it is strange to talk in the developed world about inclusion of youth because they are at the forefront of using the Internet. The issues are ownership, participation in governance and defining the future. Youth needs some capacity building and empowerment to participate effectively.

Ailyn Febles, president of the Union of Informatics Professionals, Cuba, said that isolated efforts are not enough; civil society must play a decisive role. Policies must take into account differences in conditions between countries and within countries, for true globalisation of knowledge. She mentioned a project for the creative use of ICT services that are in harmony with the environment, with a competition with a prize for the best participation of women teams.

Abeer Shakweer, advisor to the Minister of Communication and Information Technology, Egypt, added that initiatives must include people with disabilities and said his ministry has put this group high on the agenda for inclusion and empowerment and, in cooperation with the ITU, the Arab Regional ICT Center people with disabilities has been launched.

Discussion points and Q&A

- How can we reinforce the fellowship programmes of the Internet Society, ICANN and others? And there are no young people on the panel and there should be.
- What is being done to develop more opportunities for the ICT industries, so they are not owned by only a few actors or entrepreneurs?
- What obstacles has Laboratoria overcome to train women and to educate them in an environment that is male dominated?

Gabriela Rocha noted that huge potential that is not tapped because of lack of opportunities. Laboratoria has a selection process to identify women with high potential. The challenges have to do with their social context. Discrimination is a factor; when the women are empowered their husbands start limiting them. Society does not facilitate conditions for these women. But there is large demand for talent from companies, so they open their doors and obtain benefits from diversity as well.
Raúl Echeberría said that in the Internet Society, women lead. Programmes identify women entrepreneurs all over the world and now they are in leadership positions. Leading by example is important.
Yolanda Martínez noted that there has been an important reform to facilitate the creation of new firms in her country.

Other points

- SDGs give us an orientation to follow in developing the Internet. Teachers must be part of the effort. How do you conceive these projects so that policies recognize Internet as a way to improve education?
- We may not have a problem with capacity building. What is needed is for more companies hiring more women. Is it possible to set a percentage of women hired as a goal?

- You need to have users adopting more ergonomic devices and avoid damaging health. Security is also important.
- There is a project in Cuba to provide free Internet access. Women in Cuba have more equal conditions but not equal pay.
- Old people cannot compete with the young. Inclusion should include the old too.

Edmon Chung said youth participation in panels is important. Markets fail, such as for older people, and interventions must address market failures.

Robert Pepper, Facebook, commented that connectedness actually increases inequality in income until there is high coverage.

Yolanda Marti ́nez spoke to colleagues in the education sector – we all agree on the need for inclusive, integrated programmes which empower teachers, develop their digital skills and so generate more inclusive development through responsible use, she said.

Rapporteur summary

- The phrase 'content is king' was coined in the 1990s, to mean that providing content had become a more important competitive advantage than providing access to the Internet.
- The use of the word 'content' in this session suggests passive content, and leaves aside the 'prosumer' approach and interactive, value-adding services such as e-commerce, which are increasingly available to populations that were marginalised, like the poor, the young, women, etc. Their interactions make them much stronger than would the mere consumption of content and also enriches the Internet much further.
- The importance speakers ascribed to online government services is high and must continue to be a priority. These services must be considered from a user perspective and, in their constant renewal, information and services that have previously been found useful should not be removed nor made harder to find and access.
- Open data is an important trend; support must continue for users to be able to extract value from it.
- Fundamental needs for new content and services are interoperability, and technical and usability standards that provide the most generality and access. An example is HTML5, which enables users on many platforms to access the same content and in the same way, and makes life easier for content providers, especially small ones, as they only have to develop their services once instead of customising to each platform.
- The contrast between apps and the open web (even further, the open Internet) must be kept in mind, in favour of the most open access with the minimal technical and resource requirements. The poorest and the most marginalised users rely on narrow, unstable connections and on low-powered, often basic equipment.
- Cloud-based services lower the barrier to content and service creators. Account must be taken, though, of the need users have for stable, constantly available broadband access.

Best practices emerging from the sub-session

- Government services can include large-scale actions such as facilitating the creation of new firms.
- Practices like those shown by Laboratoria which focus on a target population (in this case, young, unempowered women with an incomplete education), educate and empower them, and enlist them to scale up work to serve larger and more-distributed populations.
- The example provided by one of the speakers may serve to inspire many others – Qiheng Hu's career shows how great achievements can be arrived at by a combination

of intelligence, vision, hard work, and embracing the open Internet to the fullest extent possible within national conditions.

- Empowerment of the young and marginalised comes not only from training for skills but also from training for leadership and participation in decision-making.
- Government intervention for inclusion, such as schools and work positions for people with disabilities shown by Egypt, may be the only way to provide sufficient resources to achieve long-term scaling-up to large populations and geographical extent.
- The cultivation of digital skills for teachers is an indispensable way for societies to create content and services that feed the achievement of development goals in a sustainable manner.

Part 2: Sub-session on capacity building: What are the obstacles to inclusive growth?

Questions posed to the speakers and audience for discussion:

- What are the skills necessary to access, use and benefit from the Internet and ICTs?
- What are the different ways to think about digital literacy?
- What are the unique learning needs of different populations (e.g. children, youth, older people, people with disabilities, etc.) that will require different approaches to teaching skills related to accessing, using and benefiting from the Internet and ICTs?
- What are specific examples of capacity building that have led to scalable and replicable models, including lessons learned about what works and does not work?

Speakers' comments

Rajan Mathews, director general, Cellular Operators Association of India, said the government of India has a vision of making sure that 1.3 billion of its citizens are able to get connected to broadband. A first major issue is that capacity building for coverage must be by the private sector, as the telecoms industry in India has been privatised. This means that the private sector is now expected to provide approximately $10 billion every year for the next several years. Another challenge is citizens' education, as there are 26 official languages. Partnership between government and the private sector is key to success. Enlightened policy and light touch regulations are also critical.

Antonio Garcia Zaballos, Inter-American Development Bank, noted that intensive initiatives need involvement from all actors. There is a need to address the sources of financing, and conditions of investments and financing. The roles of multinational organisations are essential, and the ministries of finance and tax also need to be involved. Coordination is needed between government, private sector, academics and the banks.

Edmon Chung, CEO of DotAsia, Hong Kong highlighted youth empowerment as a critical element for capacity building; DotAsia has focused on involving youth at the IGF, including a youth IGF program at the Asia Pacific regional IGF (APrIGF). What has been effective, and equally applicable to youth, women and older people is to let them 'run before they walk' – if young people feel empowered, included and have fun, then they are more motivated to learn, especially for those who have not had adequate development or access to traditional education. Also applicable to these groups is peer-based learning – the role of teachers has changed with the Internet, and they need to facilitate peer-based learning.

Guy Berger, director of Freedom of Expression and Media Development, UNESCO, said that peace, justice, and strong institutions are foundational to achieving any sustainable development (as embodied in SDG 16). Public access to information and fundamental freedom cannot be taken for granted, and should be an emphasis at the IGF. UNESCO has addressed this with its global movement on media and information literacy, which is focused on

developing digital skills, both online and offline. Three bundles of competencies are defined, which are intended to be applicable to everyone: the need to understand the Internet (e.g. actors, interests, agendas, what it means to get free service, problems and opportunities); the need to know their rights (e.g. privacy, freedom of expression); and how to use the Internet (e.g. distinguish truth from lies, convert information into knowledge and innovation).

Wael Abdel Aal, CEO of Tele-Med International, Egypt, noted that someone once warned, "Don't be late to the future, because the future has already left." The speed of change needs to be noted, and along with it, the restructuring of societies that is happening. The abundance of communication devices and cloud services are the strongest elements transforming healthcare, but adaptation is needed. Lots of things that used to work will no longer work, and those who don't shift quickly will become obsolete. These factors need to be built into any capacity building initiatives. There is a need to keep on open mind and be flexible on adopting approaches that work. Those who don't have formal education can still contribute and succeed. There is a need to have many pilot projects, and build on those that are successful.

Raul Echeberria, Internet Society, Uruguay, said that the Internet Society development strategy is built on four pillars: infrastructure, capacity, bringing expertise from work on the ground to advise on policy, and capacity building for empowered communities across all the needs to achieve the SDGs.

Eric Loeb, senior VP, AT&T, US commented that fundamental supply side issues need to be addressed, including universal service fund reform (are they being used to promote foundations for building out services of the future and the digital ecosystem); tax policies that are aimed at enabling an inclusive society and economy; and national broadband plans which have been shown to be effective at addressing both supply and demand side issues, but they need to be kept up to date.

Remote comment from Havana, Cuba: Experience of an institution that has for 29 years given access to ICT. It has 600 technological hubs and provides remote courses. This year, 72,000 women and 138,000 people with disabilities have been involved. There is also a social network with other networks in the country.

Discussion points and Q&A

Are there communities that don't want to be connected?

Rajan Matthews: In India, some communities are worried about the impact of electromagnetic field exposure from cell towers, and the government has had to conduct educational outreach.
Edmon Chung: Some older people don't want to be connected due to fear, and need to hear about the benefits (e.g. connect with their families).
Wael Abdel Aal: We need to communicate success to motivate other communities to join, as was the case with telemedicine in Egypt.

Intervention from the audience: Thousands of specialised multistakeholder collaborations will be needed to realise the SDGs by 2030. Infrastructure projects have had the greatest attention, but they are only one of many essential types of cooperation needed. We need to create an enabling environment that starts with infrastructure access. Such an environment should include: shared infrastructure, local content, open government data (which will bring transparency, trust, enable innovation and economic growth), the judiciary and law enforcement. The impact of connectivity should also be shared more broadly.

Rajan Mathews: Support from government is necessary to build out the necessary infrastructure.

Guy Berger: The enabling environment should also address capacity building. Everyone should be aware of the opportunities available to them when they use the Internet, and they need to experience empowerment. If people don't have the competencies, they will use only 5% of its potential.

Raul Echeberria: I agree with the need to promote an enabling environment, and also investment, innovation, and entrepreneurship. Private-public partnerships are crucial to realising the SDGs, which provides a common platform and opportunity for collaboration not just on Internet connectivity, but also education, healthcare, jobs, etc.

Yolanda Martinez: Communities need to own the process, based on our learning from a tender process in Mexico. Multistakeholder approaches and community involvement will enable the Internet to have local impact.

What are the programmes that are being implemented? Are programmes available on an equal footing and have appropriate reach?

Yolanda Martinez: The IGF is a great space to learn about the programmes that are being implemented, build networks, and share ideas that work.

Eric Loeb: These programmes are important to generate demand, but first, people need to embrace these tools. AT&T's Digital You program is an example of a program with tools to increase people's comfort online.

Rajan Mathews: India has implemented a push strategy, where every government department is required to have forms on the Internet, so simple things like booking a train ticket can be done online. People are finding that they must learn to access the Internet to gain this convenience.

Are there laws to create a culture of the Internet?

Yolanda Martinez: In Mexico, the Internet is a constitutional right. There is also a policy of inclusion that is the responsibility of the state, and part of the national digital strategy.

Raul Echeberria: In Uruguay, there are public policies to make access available to all – connectivity to 100% of the country, 100% of schools, and students to have their own computers. This is being extended to adults, including older people. The government is also committed to providing 100% of government processes through portals.

Guy Berger: UNESCO's website has information on improving digital literacy.

Rapporteur summary

A consistent theme interwoven throughout the discussion was the need for more holistic and open-minded approaches to capacity building to realise the SDGs and enable inclusive growth. It is acknowledged that although affordable and ubiquitous access, which has been a focus of many of the foregoing dialogues until recently, is a necessary condition, it is not a sufficient condition for inclusive growth. Additional issues that would also need to be addressed in more holistic and comprehensive approaches to capacity building include the following:

•Enlightened policy and legal frameworks: strong and broad support from government, accompanied by enabling policy and regulatory frameworks, are essential for any plans to enable inclusive growth. Examples of such frameworks include those that

o Encourage innovation

o Create and maintain national broadband plans that address both supply- and demand-side needs

o Enshrine Internet access as a constitutional right (e.g. in Mexico)

o Codify ubiquitous connectivity for everyone (e.g. Uruguay) and the teaching of English in schools to enable access to the vast amount of information online.

•Financing and investments: favourable conditions, including incentives, are needed to encourage investments and financing of infrastructure initiatives, especially those that are capital intensive. Ministries of finance and tax should be engaged, and regulatory reforms

considered as appropriate, including tax and universal service fund reforms. National broadband plans have been shown to be effective at addressing both supply and demand side needs, but they need to be kept up to date once created.

•Literacy: basic literacy skills are essential for everyone to access the Internet and retrieve relevant information. Ideally, this also requires that support for local languages be widely available to enable everyone to access online content in their native languages.

•Technology: a number of technology innovations are needed to support truly inclusive growth. Some examples that have been brought up in other forums include: at the infrastructure level, innovation is needed to enable last mile access to remote villages that are not on national power grids and/or pose geographical challenges to traditional telecoms infrastructures; other technologies such as Internet exchange points enable cost-effective routing of traffic; at the application level, universal acceptance technologies can enable acceptance of email addresses and URLs in native languages.

•Multistakeholder collaboration: panellists noted the importance of multistakeholder partnership in these initiatives. Successful initiatives need the stakeholders to build trusted relationships with each other; transparency and accountability are also necessary in these partnerships. For local initiatives, communities must be involved and have ownership of the benefits and services provided.

A major issue in capacity building is to be able to demonstrate the benefits of connectivity to those who are either unconnected or have chosen not to connect. Technology can and has fundamentally transformed societies and government services. As such, approaches that used to work will no longer work, and new challenges are introduced that must be addressed. This requires those involved to keep an open-mind, be flexible, and have a willingness to re-think what are the issues involved, and consider new solutions. Examples of capacity building approaches that take these elements into consideration include:

•UNESCO's global movement on information literacy, which advocates a holistic approach to educating users, with emphasis on the need to communicate the benefits to each user. With information literacy, capacity building is not just about connecting, but also addresses people's need to understand the Internet, their rights on the Internet, and how to use the Internet to realise their potential.

•Enabling people to feel empowered personally with 'run before walk' approaches, where people are able to experience the benefits first. An example is bringing youths to events such as the IGF so they can participate in these discussions, and experience how they can impact future developments. Government-push solutions, where more convenient services are available online, is another example. Creative thinking on these types of solutions, especially how they may apply to other populations such as women and older people, are necessary to enable inclusive growth.

•Peer-learning is also great way to motivate people and communities. This can range from communities learning about the benefits of telemedicine and wanting to get connected, to youths (especially those who are either not traditionally educated or have access to traditional education) learning about opportunities that are available to them through Internet access. However, peer-learning also applies to policy stakeholders, who should take note of what works, and the contexts in which these practices were deployed.

Lastly, a comment from the floor suggested that metrics on capacity building and inclusiveness are necessary to measure current progress, as well as to understand the magnitude of investments and efforts still necessary to achieve inclusive growth.

Part 3: Sub-session on local relevant content: Importance of local content and language to inclusive growth

Questions posed to the speakers and audience for discussion:

•How important is local content to increasing Internet adoption, use and benefits?
•What are the different types of local content?

•What are examples of projects that have developed local content, particularly those that involve multiple stakeholders, and what lessons can be learned from each of those projects?
•Are there different models of local content development that can be customised for local circumstances to increase the probability of building sustainable local content creation organisations and businesses?

Speakers' comments

Daniel Abadie, Undersecretary of Digital Government, Ministry of Modernization, Argentina, said that connection does not equal access. Local content is needed for inclusion. The Internet presents the possibility of building a community and new opportunities – for young to link with old, for entrepreneurs to teach others to sell products. As a civil society and technical community, we need to provide answers to the question 'Internet, what for?' for everyone if inclusive growth is to be achieved.

Megan Richards, principal adviser, DG Connect, European Commission commented that support of local languages is essential to ensuring that local content will be developed. In Europe, there are 23 official languages, two of which use non-Roman scripts. For Europe and the rest of the world, local languages and Internationalised Domain Names (IDNs) must be supported to ensure that people have access. IDNs make up only a small percentage of the 1,930 new gTLDs [generic top level domains] launched in 2014. Another necessary element is development of digital skills.

Raul Echeberriá, Internet Society, Uruguay, noted that local content improves the experience for users. And if there are more users, there will be more investments, thus completing the virtuous cycle. Government services are a form of local content that can make the Internet relevant for everyone. The Internet also provide opportunities to make money – in one project in India, people who were connected have the opportunity to double their incomes.

Wael Abdel Aal, CEO of Tele-Med International, Egypt, said that governments can be obstacles or facilitators; however, governments will be encouraged to act if they can see benefits. As an example, he gave the telemedicine program in Egypt, which started as a small project in an underserved, remote area. With each success (i.e. value of the project proven), the programme is gradually built out with services and contents that respond to local needs, along with awareness campaigns to the public. Government and the funding communities are partnering closely with the private sector and local communities, building out a sustainable ecosystem that can grow, coupling education, awareness, and service delivery at every step. In addition to providing better healthcare, the programme also saved 2 billion Egyptian pounds per year in travel costs for the healthcare providers – providing further incentives for governments to invest in connectivity for these remote areas.

Chuang Liu, professor at the Institute of Geography and Natural Resources, China, said no organization alone will be able to collect and store all the data related to the SDGs, so there is a need to develop common methodologies and principles for sharing big data created from local observatories and research. The Nairobi data sharing principles were developed for the research community to share data on developing countries that were the results of publicly funded research. The data sets are peer reviewed, and linked to a global sharing infrastructure. Training workshops on these principles are being held in a number of countries to build out further capacity for data collection. Three elements are critical: open data that can be shared; common bottom-up methodology for data sharing; and local data collection, but networked globally to enable all societies to benefit from the knowledge gained.

Eric Loeb, AT&T, said his company's Escuela Plus program provides educational contents for teachers and students in Latin America, using the paid TV satellite infrastructure to reach some of the remote and underserved communities.

Jari Arkko, IETF chair, noted that both quality and quantity are needed in the creation of locally relevant content. More generally, openness, the ability of everyone to create services and businesses, the ability to trust the Internet, and lack of surveillance and censorship are basic criteria for people to use the Internet. People need local content, in local languages, that respond to their needs. But there are many practical barriers. Technology such as internet exchange points, submarine cables, cloud services can help. An appropriate regulatory environment that enables people to provide local content services is crucial. Government services in the cloud is another form of local content. Many stakeholders need to work together, including global and local entities.

Bobby Beta, Bollywood director, said that about 70% of Internet traffic in most countries is entertainment. The Internet is now a new delivery system, changing how content is produced and consumed. Local content can now be distributed widely and cost-effectively in India, as well as to those who do not live in India. However, the way to monetise content has not changed, and new business models are needed. This is an important question that this forum should address.

Q&A and discussion

• In Latin America, only 26% of the content is local, which is lower compared with other regions in the world, even Africa. An important question is: what are appropriate and sustainable business models for use in developing countries to finance production of contents that need to be free for users, e.g., applications for healthcare, social inclusion, education, etc. The Frida Awards in Latin America gives grants to develop these types of applications, but records show that these applications die out when the grants dry up.

Wael Abdel Aal: Existing business models on the web include pay as you go, subscription, or free where the service is subsidised by a sponsor. The model that is used must be individualised and appropriate for the service offered. This is a million/billion dollar question.

Jari Arkko: This is a global issue, e.g. news media are struggling with this question for their business models. User-generated and professionally-generated content must find ways to compete differently, and news media must transform itself.

Eric Loeb: The future of mobile is video and the future of video is mobile. These are traditionally different sectors with different business models. In this new world, there must be flexibility to try new business models, e.g. multisided business models that can blend subscription, distribution, advertising, in a way that delivers good value to consumers. Or instead of one traditional way to generate revenue, there may be marginal ways to deliver value and generate revenue.

Chuang Liu: There are three models in China: people develop content and data to share with others; government invests and develops content and data to share in China; or government invests and develop content and data to share worldwide.

Raul Echeberrí́a: There is no relevant content because there is not a big market; but also there is not a big market because there is no relevant content. Governments can change this by promoting local culture and productions – and note that there are more opportunities for this content to be consumed because of the power of the Internet. Uruguay only has 3 million people, but there are 600 million Spanish speakers in the world, and it is now possible for online content to reach this large population via channels such as YouTube.

Alejandro Pisanty, National University of Mexico: We should not be discussing whether access or content is more important (an old debate), and instead consider the notion of services, and how they can transform the way people do things. Content implies passive consumption, whereas services imply interaction and using content to make something else happen. Also, it is important to focus not just on producing content, but also on technical infrastructure that is necessary to facilitate and enable content production by anyone, including cloud interoperability, and a more open environment for intellectual property to allow people to do mash-ups. Regarding business models, money is not available to finance large projects for

content production, so there should be policy to foster smaller productions, such as those by individuals.

Rapporteur summary

•There was agreement that there is a critical need to support local languages and local content to enable inclusive growth. Technology has a role in enabling this, for example in supporting internationalised domain names, email addresses and content.

•With more locally relevant content, user experience will be improved and more users will see the benefit of connecting to the Internet, resulting in more wanting to connect, thus expanding the market, and attracting additional investments for not just relevant content but also interactive services. This is a virtuous cycle for inclusive growth. Development of digital skills is thus foundational to the achievement of the SDGs.

•The challenge is though how to drive creation of local content, and where to start. The following were discussed:

o Government services: Governments can be obstacles or facilitators. If the benefits can be clearly demonstrated (e.g. cost saving for healthcare, improved education), then government has additional incentives for funding more online services. More people will then use these online services instead of waiting in line, creating further incentives for investments, again closing a virtuous cycle.

o Opportunities to make money: Locally produced content now has a much larger potential global market. For example, only 26% of content is locally produced in Latin America, but with the Internet, any of the 300 million Spanish speakers around the world is a potential consumer of such content.

o Infrastructure that facilitates production and enables sharing of content globally: There are both technology and policy issues. Barriers for creating content should be removed, intellectual property issues addressed, and support provided for the media and arts communities. The sharing of content needs appropriate platforms. Privacy, security, IXP, interoperability of content and platforms such as cloud, and open standards are all parts of an enabling infrastructure to achieve this sharing globally. Sharing of local data globally needs bottom-up methodology with appropriate data sharing principles.

•There are outstanding but important questions on how to finance the production of local content and how it can be monetised. There is a lot of user-generated content that is very low cost to generate, but content relating to health and education also needs to be produced. The challenges of monetising content were acknowledged by all. New business models for different sectors need to be explored. Flexibility in supporting new business models was also brought up.

•Government has a role in encouraging relevant local content and services development. But multistakeholder approaches and processes are essential, involving the technical community, government, business, civil society, as well as local and global entities, if the SDGs and inclusive growth are to be achieved.

National and Regional IGFs

Session objectives and structure

This session was organised by a bottom-up process contributed to by 79 national, sub-regional, regional and youth IGFs including 72 officially recognised and 7 that were in formation, all acting on an equal footing. Records of the preparatory work are available on the IGF website. The objective was to showcase the National and Regional IGFs (NRIs) to the wider IGF community, reflecting both their commonalities and their uniqueness. It also sought to reflect their direct engagement in the IGF, while highlighting the national, sub-regional, and regional activities in areas agreed as topics for this session.

Although the NRIs have multiple topics locally, they decided to structure this session into two major segments, where each of the segments had two topics:

Segment I
•Topic A: Access and enhancing opportunity for the unconnected and under-connected
•Topic B: Secure, resilient and trusted Internet from the NRI perspective

Segment II
•Topic A: Reliable and sustainable funding sources for NRI events
•Topic B: Challenges in how to create more awareness about Internet governance and why stakeholders should be actively engaging.

The NRIs sought to have the broadest representation possible and 41 speakers confirmed, accepting 3 minute speaking slots. Opening the session, the moderators presented the history of the NRIs, referencing that they are not mandated by the Tunis agenda, but spontaneously organised while respecting the IGF core principles of being open and transparent, inclusive, bottom-up, multistakeholder and non-commercial in their organisation and work.

To set the stage, the moderators presented a timeline illustrating over 50 NRI meetings during 2016, as well as the geographical location of each of the NRIs. A brief analysis of the growth of the NRIs across the IGF mandates was presented, illustrating that at the end of the first mandate (2006-2010) and during the second 5 year mandate (2010-2015), there were 37 IGF initiatives, while now there are 79 in total, and are working toward their first annual event during 2017.

Key messages are shown below, for each of the four topics.

Segment I

Topic A: Access and enhancing opportunity for the unconnected and under-connected

- The process of having a dialogue at a national level is important to the overall development in the region: both national and sub-regional/regional discussions are important.
- Issues such as access and connectivity, localisation and local content have tremendous social, economic, political and geographic diversity.
- Efforts to secure the broadest possible participation of all stakeholders and to sustain the momentum of civil society interests, as well as the private and public sector interests, are hampered by lack of access, affordability and the challenges faced in understanding Internet governance.
- Access and enhancing opportunity for connecting the unconnected include national and sub-regional issues, such as identifying under-connected groups, like women and youth, or those in remote areas in a country or sub-region/region.
- Internet access with mobile technology should be seen only as a temporary solution because of the limitations it brings. Broadband connectivity must be about more than mobile access, and also includes capacity building, useful content, and affordability.

Challenges identified

- There is a need to have access to broadband, and availability is one important aspect. The Internet needs also to be accessible in terms of practices, through capacity building, useful content, local language, etc.
- A multistakeholder approach and collaboration is needed to increase engagement and to support each other.

- More efforts are needed at national level and in the regions for multistakeholder groups in terms of implementing IPv6, fibre optics, and other new technologies like white space technology.
- Digital literacy is key, and more effort needs to be made by all stakeholders at the national level and across developing regions to educate users about the importance of engagement in Internet governance activities.

Topic B: Secure, resilient and trusted Internet from NRI perspectives

Overarching messages – repeated by several IGF initiatives

- The Internet needs to be preserved as an open, secure, stable, resilient and trustworthy space.
- Dialogue and collaboration among all stakeholder groups – government, private sector, technical community and civil society – are key in addressing cybersecurity challenges and contributing to an open, stable, secure and trustworthy Internet.
- Ensuring the safety of Internet users is a shared responsibility, with governments and the private sector playing a key role.
- Trust is key in the digital age. Trust in using the Internet is something that needs to be built, so that everyone (including those with disabilities, and other marginalised and vulnerable groups) can participate in the digital society.
- Human rights should be taken into account when devising policies aimed at enhancing trust and security on the Internet.
- Education and awareness raising are key for enabling users to better protect themselves while online.

Specific messages

- Content control polices undertaken by governments to deal with problematic content such as online extremism need to be proportional.
- Measures such as blocking are often counterproductive.
- There should be no trade-off between privacy and security. The two should be kept in balance.
- Regulation is important in addressing cybersecurity issues, but it is not sufficient in itself.
- Encryption is an important tool in protecting human rights online. Governments have different approaches towards the use of encryption tools. Clarity and predictability is needed when it comes to the conditions under which law enforcement and security agency can circumvent encryption, ensuring a balance between security and human rights.

Segment **II**

Topic C: Reliable and sustainable funding sources for NRI events

Funding is a challenges for NRIs, especially in areas with small digital ecosystems. On one hand, existing NRIs are limited in their intersessional activities and find it hard to ensure the continuity of a yearly event. On the other hand, lack of funding can delay the launch of NRIs, as often the local organising team has early start-up costs to even plan their first event. This is especially true when funding sources are depending on 'in-kind' contributions. Having start-up funding can help to generate 'in kind' contributions and encourage additional sponsors.

NRIs need to define funding strategies and create funding mechanisms with long term, reliable funding, although much depends on donations and voluntary contributions.

Funding processes need to ensure that the multistakeholder process is not limited or affected in any way by financing. It is important to maintain neutrality and transparency, and a multistakeholder funding mechanism – diversity of funding sources is important to avoid assumption of influence.

Government participation in NRIs is critical in providing reliability and confidence, and there is consistent need for more support from the private sector. There is also a need for collaboration among all stakeholders. It is evident that stronger engagement of stakeholders increases their appreciation for a national/sub-regional and regional dialogue space and hence their willingness to support NRIs. For this, more awareness about Internet governance and its implications for each stakeholder group is needed. This was a consistent call to action by all NRI speakers.

It is useful for NRIs to consider how to define their structure and rules through a statement of purpose or, in some cases, through a charter that is accepted by the organising committee/steering group of the NRI. This may also help to secure funding commitments from stakeholders and get more funders on board as it defines the NRI commitment to neutrality and bottom-up planning, and inclusion of all stakeholders.

It is more important to support wider participation in the NRI event than holding an event that is overly lavish. This could be achieved by directing funding more towards scholarships and remote participation, and also towards getting participation from different regions and cities as well as from the various sectors and parts of society. While this may mean in some cases nomadic organisation and rotation in places, it also increases costs as it is not always easy to find local hosts. Each country and sub-region/region should determine what works best for them.

There is need to maintain and increase funding sources such as the IGF Support Association (IGFSA) and supportive mechanisms provided by the IGF Secretariat.

In some cases partnering NRIs with other events within the region or country could decrease costs and secure the support of funders, not only in providing monetary funds but also in various other ways.

Topic D: Challenges in how to create more awareness about Internet governance at the national and regional levels, and why stakeholders should be actively engaging

From the range of answers and models presented in this section, it is clear that one size does not fit all. Each nation and region has to come up with a solution that is right for them. However, there are some areas of consensus and shared experience:

- The multistakeholder model is key and helps outreach in a number of ways:
  – It allows outreach through multiple networks to reach potential new participants
  – It facilitates engagement with all stakeholder groups
  – Participants and speakers can be ambassadors and help to spread the word
  – by speaking in other venues
  – Setting the agenda in a bottom-up manner ensures the topics are appealing and relevant to participants from that country/subregion, or region

- Mechanisms to educate people about Internet governance activities can help to engage newcomers in an NRI, by raising awareness and building trust
- A number of NRIs have some form of youth engagement programme

- Continual improvement is needed for an NRI to remain relevant and attract new participants. The end point is never fixed and assuring a bottom-up and evolving approach to taking views into account strengthens each NRI. Collaboration and links with other groups and forums are helpful. These include linkages between national, regional and the global IGF as well as with other relevant organisations, forums and policy processes in the nation or region
- Innovative formats, the use of social media and accessible online participation help to raise awareness and improve outreach.

There needs to be a purpose in the discussion to encourage participation. People who are attending need to be aware of the aim and purpose of the NRI. This varies between the NRIs that presented but include elements such as:

•Outputs in the form of recommendations, output statements or papers

•Links to national or regional or global policy

•Specific mechanisms from national and subregional/regional levels, to feed into the global IGF.

The NRIs then held a further coordination session where they evaluated the main session and their engagement at IGF11. They committed to developing a consensus recommendation to the MAG regarding their 'reflection' into the IGF and the IGF reflection into their activities.

Human Rights: Broadening the Conversation

Key Issues raised:

1. Civil and political rights (CPR): The discussants were asked to reflect on the achievements, as well as emerging key issues in this area
2. Economic, social and cultural rights (ESCR): they have not been extensively been on the agenda at Internet governance forums, and have traditionally received much less prominence than CPR
3. The interconnections between CPR and ESCR.

Civil and political rights (CPR)

Ana Neves, Department for the Information Society, Fundaça□o para a Ciência e a Tecnologia in Portugal, noted three important components:

- Empowering citizens to strengthen their CPR
- Respecting privacy and personal data
- Addressing the interplay between content policy and freedom of expression.

Herna´n Vales, UN Office of the High Commissioner for Human Rights, provided an overview of the milestones at the Human Rights Council over the past 5 years, including the growing sophistication of the council's resolution on the promotion and protection of human rights on the Internet. As a consequence, nations now know that they are being scrutinised, and they can no longer claim that there is no clear framework of human rights on issues related to the Internet.

Patrick Penninckx, Council of Europe, noted that adherence to rights and values is not a linear process, leaving the perception that we 'go backward rather than forward'. In addition, ESCR instruments are often too outdated – stemming from the 19th century – to effectively address the changed context of the digital age.

Luis Fernando Garcia, executive director of R3D, the Digital Rights Defense Network of Mexico, focused on challenges to privacy, as surveillance is becoming increasingly common. He provided several examples from Mexico, and posed the question of how to make progress on this topic.

Will Hudson, Google, provided a view from the private sector, and highlighted three issues:

•The importance of the freedom of expression, which is not static in time, and therefore continuously needs to be addressed

•The importance of transparency to understand the ways in which freedom of expression is challenged

•The importance of a multistakeholder model to benefit from the engagement of actors from all sectors, noting that, "Google doesn't always know the answer."

Paz Pen☐a, journalist and researcher on human rights, raised the question of whether digital technologies will become an enabler for citizens or rather a smart tool to control subjects. To prevent the Internet from becoming a device for oppression, transparency and democratic oversight are necessary.

Rebecca MacKinnon, director of the Ranking Digital Rights Project at the New America Foundation, shared Pen☐a's call for transparency, and explained that existing governance systems are not built for information societies, providing companies with possibilities to exercise their power globally. Although some companies are making efforts to meet their responsibilities, more effective mechanisms are needed.

Anita Gurumurthy, executive director of IT for Change, mentioned a number of milestones that have been achieved in relation to CPR, but explained that these achievements need to be consolidated, which would require looking beyond the dichotomy of online and offline dimensions – a statement that was later echoed by MacKinnon. She also pointed to the importance of holding power structures accountable to prevent neo-colonial tendencies in the governance of digital technologies, particularly in relation to algorithmic decision-making.

Stuart Hamilton, International Federation of Library Associations and Institutions, spoke about the importance of the right to information, which includes the right to access culture, research and innovation, as underscored in the SDGs. One critical area for reform is on copyright law, to enable the development of a digital environment that facilitates rather than restricts access to information.

Economic, social and cultural rights (ESCR)

Juan Fernandez, Ministry of Communications, Cuba, noted that despite the long history of ESCR, they are still not being addressed on an equal footing, and with the same weight, as CPR, including in debates on Internet governance. The 2030 development agenda does provide an opportunity to put these rights at the heart of Internet governance.

Carolyn Nguyen, Microsoft, shared this view, and pointed to the opportunity for ESCR to align with the SDGs, and thereby broaden the discussion on Internet governance, opening it up to different ministries, creating additional pressures, and establishing a more holistic, balanced discussion.

Sally Wentworth, Internet Society, focused on the issue of access and its inextricable linkage to human rights. She stressed that access does not simply stop with technology, but that it needs to be of sufficiently quality to empower individuals.

Nanjira Sambuli, Web Foundation, examined access for women more closely, including existing disparity based on income, policy and social norms, and highlighted how the Internet

is an enabling tool for women. She noted that Internet shutdowns are keeping women from accessing meaningful information. She stressed the interdependence of CPR with ESCR.

Carla Reyes, professor at Stetson University College of Law, explained how blockchain technology could serve as a way to further incorporate ESCR in the Internet governance agenda, as it is a tool for distributed collaboration and more participatory decision making.

Sally Burch, Agencia Latinoamericana de Información, discussed the complexity of Internet governance, where current established international human rights mechanisms are inadequate to deal with challenges including accountability of transnational actors in issues related to labour rights, women's rights etc. As a result, ESCR can no longer be ensured solely by governments, and there are inadequate mechanisms to deal with this.

Burcu Kilic, Public Citizen's Access to Medicines Program, addressed the topic of trade agreements and the need to incorporate ESCR in this area. She explained: "It doesn't make sense for trade negotiators to think about these issues unless we bring them to their attention."

Linking CPR and ESCR

David Souter, ict Development Associates, emphasised the indivisibility and equal status of CPR and ESCR, and close links between ESCR and SDGs through the right to development. He raised 3 areas of interconnection between ESCR and CPR: the right to expression as enabling ESCR, access to the Internet as an enabler of rights, and the principles of non-discrimination and equality.

Frank La Rue, UNESCO, emphasised the importance of placing human beings at the centre of our considerations. Furthermore, all rights form an equal, interdependent, interrelated, and universal network, "If we break any part of it, it becomes useless."

The role of Internet companies: Many participants pointed to the increased power – and hence responsibility – of Internet companies, including their control over user data and the information that they publish. Luis Fernando Garcia highlighted this dominance, as he argued that companies "are starting to make decisions impacting more people than governments". Rebecca MacKinnon explained that good data protection laws are necessary, as companies will otherwise "not bother to adhere to best practices". According to Stuart Hamilton, education should include digital skills training, which is needed to understand the algorithms used by companies to manipulate the information we see.

Government surveillance: Hernán Vales remarked that although there is growing awareness among governments about rights and how to respect them, they have become more sophisticated in finding ways to go around them. Luis Fernando Garcia added that governments often do not comply with the law.

The role of citizens: According to Paz Peña, users can play an important role in avoiding the use of services on Internet platforms and companies that are monopolising user data. Frank La Rue added that communication is fundamental for development; without information, we cannot build knowledge societies and reach the SDGs, and in today's 'world of danger', we have to reaffirm the human rights focus through a multistakeholder dialogue, as policies will not come from states or corporations alone. "This is the only alternative."
David Souter said the two covenants of rights are part of a single, indivisible rights regime. At the same time, they generally demand different roles for governments and businesses, which need to be taken into account. The two covenants have an equal status and merit equal attention. Efforts to achieve ESCR can broaden and deepen the understanding of CPR, and vice versa. The Internet poses challenges and opportunities. When ESCR are weakened, so are

the CPR that depend on them. ESCR are often associated with the SDGs, which provide a unifying framework.

Herná n Vales proposed different ways to place human rights at the center of digital policy, including:
• Applying the principles from binding human rights law to the Internet
• Thinking in terms of duty-bearers and rights-holders, which would make it easier for individuals to claim remedies
• Being aware of the application of the human rights framework to our everyday work on Internet policy.

Dynamic Coalitions

At IGF11, Dynamic Coalitions (DC) came together for a main session for the second time. Driven by a shared desire to present their work collectively, expressed clearly during their first main session in 2015, DCs, with the support of two co-facilitators and the IGF Secretariat, devised this year's main session programme over the course of regular coordination meetings throughout the year.

The session's interview style approach, in which the moderator, Tatiana Tropina, questioned DC representatives with a provocative slant, served to highlight the current and most significant areas of work for each of the 12 participating coalitions. The questions and answers given were drawn from documents produced by the coalitions ahead of the meeting. As emphasised by co-facilitator Markus Kummer, who also chaired the session, this format was agreed as a preferred alternative to straightforward reports on those outputs. The richness and variety of DC topics, referenced in opening remarks by the honorary chair, Victor Lagunes, was evident in the session.

Participants learned that the DC on Accessibility and Disability (DCAD) has annually produced accessibility guidelines which have helped to greatly improve IGFs for persons with disabilities, including at IGF11, and that the next target will be the training of on-site IGF staff. DCAD is working to promote the standardisation of technologies, including the Internet of Things, in continuous support of persons with disabilities.

The DC on Gender and Internet Governance (DC-GIG) focuses on the experience of the Internet user according to gender identity – in terms of access and the rights accorded – and that the 'user' of common parlance can no longer be seen as generic, but rather as female, male, trans, gay, etc. The coalition makes its own important contribution to annual IGFs with the IGF Gender Report Card, which looks at the participation of women in the meeting.

Among the initiatives endorsed by the DC on Child Online Safety (DC-COS) are age-verification systems to protect children against explicit content on commercial pornography websites. These online innovations, and legal measures such as fines, are part of the DC's advocacy work. In response to a participant question, DC-COS also noted that the majority of Internet users worldwide are children or minors and that the Internet governance discussion so far has not been sufficiently inclusive of them.

The DC on Community Connectivity (DC3), new in 2016, shared its analysis of community networks and their relationship to connectivity, finding not only that the networks help provide access but render it sustainable over time. Community networks are also important contributors to the extensive data gathering work of the other new coalition this year, the DC on Innovative Approaches to Connecting the Unconnected (DC-Connecting the Unconnected). The DC will produce a narrative report on the more than 200 innovative methods recorded

for connecting people to the Internet, and will rely on the IGF community to help it gather further case studies.

The DC on Public Access in Libraries (DC-PAL) is similarly committed to the issue and study of connectivity, particularly for under-served communities. It reminded participants of the vital role libraries play in providing open, accessible spaces for Internet use in rural and remote areas, as well as in delivering locally produced content and government services online.

The work of the Internet Rights and Principles Coalition (IRPC) is not just represented by its charter of rights, which is available in 7 languages, but by the guidance and advice it provides to institutions as well as governments. Participants were told the charter served as a basis document for policymaking in both Italy and New Zealand. Internet rights should be differentiated from, but may very well be linked to, what are understood as the technical-facing values with which the DC on Core Internet Values (DC-CIV) is concerned – such as interoperability, openness and decentralisation. The recent work of the coalition asks whether these values are now evolving.

The Internet of Things, as studied by the DC on IoT (DC-IoT), is part of that rapidly changing Internet landscape and raises many security-related questions. The coalition suggests that the best way to address these is through a multistakeholder effort by businesses, service providers, regulators and individual users, who should take responsibility for being better informed and technologically aware.

In its latest publication, the DC on Net Neutrality (DC-NN) has looked at the relationship, or what is often seen as the tension, between net neutrality and zero rating. Among the views presented in DCNN's book, both favouring and critically deconstructing zero rating, it questions the notion that the zero-rating policy is an important enabler of access, in light of the several other measures and policies that accomplish the same objective.

Another hyped or highly topical issue is that of blockchain technologies, which the DC on Blockchain Technologies (DC-Blockchain) has argued are often being used in an indiscriminate way. The coalition seeks to examine the cases which are most appropriate for decentralised architecture and the application of blockchain.

The Dynamic Coalition on Internet and Climate Change (DC-ICC) brings to the fore an issue that is too seldom discussed in the IGF context. Part of its aim is to ensure that the role of ICTs in climate change – especially relating to the Sustainable Development Goals (SDGs) – are discussed, as ICTs both contribute to and mitigate climate change.

A proposed Dynamic Coalition was discussed at IGF11, on 'publicness' – which aims to tackle the issues of the right to be forgotten in various jurisdictions, freedom of expression, and other digital rights.

Participants were encouraged to join coalitions in their discussions throughout the year by subscribing to their mailing lists, as well as to add their own views to the DCs' ideas and proposals in a direct way, through the DC issue surveys available on the IGF's website. Coalitions will use this feedback to further refine their work.

Trade Agreements and the Internet

Key issues

Just as trade agreements can be used to increase wealth and opportunity by promoting the mutually beneficial exchange of goods and services, so too there is the potential for them to be

used to promote a free and open Internet. However, without the participation of all stakeholders, they may instead result in affecting core values, principles and rights for the Internet.

Openness and transparency in trade agreements are needed as experts from all stakeholder groups, including civil society, can contribute perspectives that are necessary to reach rules that are balanced and respecting human rights – but it has proven to be challenging to do this without proper access to information and negotiating texts, and the ability and funding to participate in trade advisory processes.

Governments and the private sector have come realise that trade agreements need to involve a dialogue with society if they are to be accepted. Therefore, it is also important to recognise the efforts and changes the have been made by governments to include more transparency and participation. However, negotiations with government experts are often through specialised spaces and stakeholder networks that are not always accessible to a general audience, which requires an effort from all stakeholders in educating and transmitting accurate information. The private sector, on the other hand, has concerns about standards and processes involving technology which is fundamental to the Internet, and that this core should be preserved.

Presentations and discussion

Burcu Kilic, Public Citizen, said that civil society has to be more present in trade agreement negotiations and make its voice heard. In the post-Trans-Pacific Partnership (TPP) era, the failure to include citizens will result in the rejection and failure of future trade agreements. The transition period in the US and globally requires a set of new priorities to be reached for future bilateral and multilateral negotiations.

Jeremy Malcolm, EFF, said that opposition to current trade negotiation processes does not mean that "we are against trade". In fact, trade can be beneficial to the Internet, and by the same token perspectives from Internet governance stakeholders are invaluable to concluding successful trade agreements. Although novel, the changes required to trade negotiation processes are quite achievable and simple. First we should decide on a set of issues that are better dealt with in some other forum. Second, proposals and consolidated texts should be released, trade advisory committees should be opened up, and trade negotiators should draw on the IGF community's expertise

David Snead, Internet Infrastructure Coalition, noted that all participants in international trade must be given real, effectual, procedural avenues for participation in the negotiation and implementation of trade agreements. While there is a place for secrecy and confidentiality in negotiations, and in the text of agreements, it has gone too far. The secrecy surrounding trade agreements should be rethought.

Joseph Alhadeff , Oracle, said it is important to consider the proven benefits of trade and the provisions of trade-related documents separately from concerns related to the process. Trade benefits should be recognised and positive provisions in trade agreements should be welcome even as work continues to improve the inclusiveness and transparency of the development processes.

Juan Antonio Dorantes Sa ́nchez, trade expert, Mexico, added that trade agreements are not a novelty and their historical effects, such as in the case of NAFTA, can be studied to help understand further steps in the future.

Marcela Paiva Ve ́liz, trade expert, Chile, said the Internet is a new dimension for humanity. Therefore, being a fundamental tool for trade, it also impacts people's lives. This needs to be

taken into consideration in trade negotiations. However, stating that trade agreements are broken is not an accurate picture, specially coming from a country where GDP is mainly based on trade. Governments have their own specialised networks of communication and their own procedures of negotiation. Understanding democracy as the basis of these interactions, transparency and participation measures are very important as well. It is also important to highlight that a lot of related issues are being dealt with in UNCTAD, the Human Rights Council and other forums, which also need to be taken into consideration.

Raul Rendo´n, director of Innovation, Services and Domestic Trade, Mexico, said his country has participated in the history of trade agreements and will continue to engage in the global community of trade and internet governance.

Marietje Schaake, Member of the European Parliament, commented that trade agreements can play a crucial role in constructing a global rules-based framework for digital trade, but they cannot change fundamental law, at least not in the EU. "This is a perception though that many people hold, and it can lead to confusion. I see both a lot of unjust hopes and unfounded fears. If we want trade rules to strengthen the open Internet and human rights online they must take as a baseline strong protection of human rights as well as inclusiveness."

It was noted that the IGF was established as a global multistakeholder forum to address Internet-related public policy issues. But an increasing number of such issues – including domain name dispute resolution and access to registrant data, the use of encryption standards and source code disclosure mandates, and cross-border information flows – are now also being dealt with in trade forums such as the WTO and in trade agreements such as the Trans-Pacific Partnership (TPP), Trade in Services Agreement (TISA), Trans-Atlantic Trade and Investment Partnership (TTIP), and Regional Comprehensive Economic Partnership (RCEP).

There is a need to ensure that discussions on trade policy are not isolated from broader multistakeholder discussions of those same topics; in particular, because national trade ministries and trade negotiators do not always perceive these as being Internet governance issues, but view them simply as trade issues. Therefore, participation processes for interested stakeholders are very important.

Next steps

A meeting on trade policies will contextualise the theme on the changes in the US government. This meeting is scheduled for December 2017 in Washington, DC, and will have as background material a trade policies transition memo drafted by civil society representatives.

It is also important to note how developing countries should pay attention to trade policies and the Internet. The WTO, for instance, is an organisation split between demands for agricultural commitments coming mainly from developing countries and the need to address new issues, mainly supported by developed countries, proposing commitments on e-commerce, and other related issues. It is important for developing countries to think about their digital trade agenda. In this regard, while understanding that infrastructure and connectivity are basic elements, views for defining rules need to have a balanced result, and the considerations of developing countries are very important in this process.

The other problem for developing countries is that once these multilateral agreements are in place other countries can join later but by that time the terms are already set. Therefore, it is important to consider the involvement of all countries in trade policies and the Internet, which could be met if there is broad engagement on constructive negotiations in a multilateral context.

IGF Best Practice Forums and Policy options for Connecting and Enabling the Next Billion(s) – Phase II

This session presented the outputs of the 2016 IGF stakeholder-driven Best Practice Forums (BPFs) on Internet exchange points (IXPs), IPv6, Gender and Access, and Cybersecurity, and showcased the outcomes of Phase II of the IGF's 'Policy options for connecting the next billion(s)' (CENB) intersessional work.

The session highlighted that these community activities result in resources from which policymakers can draw when addressing Internet policy issues. The session also sought community suggestions and input as to how these outputs could be taken forward into other relevant Internet governance forums and how IGF community intersessional work could be enhanced. Finally, the discussion also addressed how to improve IGF outputs in light of the recommendations of the CSTD working group on IGF Improvements.

Speakers noted that the IGF BPFs continue to offer unique platforms to investigate topical Internet policy challenges by collecting community input and experiences in a flexible and bottom-up manner. Through their outreach efforts and continued calls for input and contributions, the BPFs have already enabled more diverse and varied participation in IGF processes, including from a wider variety of regions and stakeholder groups. By continuously involving new people in their work, the BPFs have also contributed to enlarging the global footprint of the IGF. BPFs worked throughout the year in an open and inclusive way via open mailing lists, regular virtual meetings, and BPF workshops during IGF11.

The BPF on Gender and Access has published 'Overcoming barriers to enable women's meaningful Internet access', builds on work in 2015, when it also published an extensive resource on online abuse and gender-based violence. In 2016, the BPF also produced an infographic roadmap for addressing online abuse and gender-based violence, based on the recommendations for stakeholder groups from its 2015 report.

The BPF on Cybersecurity built on the previous work of the IGF CSIRTS and SPAM BPFs at IGF11. Its work was also guided by the WSIS+10 review process which produced an outcome document with a focus on building confidence and security in the use of information and communications technologies, making an IGF BPF related to cybersecurity even more relevant. The 2016 discussions and output report addressed cooperation and collaboration on cybersecurity issues between stakeholder groups as an overarching theme.

The on IXPs collected best current practices that have proven to contribute to building strong and successful IXPs. Exchanging traffic at an IXP has a number of benefits that can contribute to a more affordable, stable, faster and more reliable Internet in a region. The success of an IXP is measured by its ability to sustainably contribute to the development of its local Internet ecosystem. The BPF on IXPs focused on the management and operation of an IXP and identified factors that can contribute to success.

IPv6 is the Internet's addressing system that was developed to deal with IPv4 exhaustion and to make the Internet future-proof. The fast-growing number of networks that already supports IPv6 today is proof that IPv6 is a technically feasible option for business. The BPF on IPv6 collected case studies on commercial experiences with IPv6 deployment to better understand challenges and incentives.

In 2016, the IGF furthered its seminal work on 'Policy options for connecting and enabling the next billion(s)' by investigating challenges and opportunities for addressing and overcoming barriers to meaningful Internet access, promoting access in diverse contexts and regions, and ensuring that access also supports the achievement of the UN SDGs. Participants in the session were encouraged to share these BPF and CENB – Phase II resources with their communities

to ensure that the IGF resource outputs also become useful inputs into other processes of relevance to the Internet and its governance in 2017 and beyond.

It was also said that these resources could not only be useful for policymakers and other stakeholders, but also continue to symbolise the IGF community's belief that multistakeholder collaboration is fundamental to addressing Internet policy challenges. All outputs from the IGF's intersessional activities are intended to be living documents that can be updated at any time. It was said that at the first open consultations and IGF Multistakeholder Advisory Group (MAG) meeting in 2017, stakeholders would discuss potential themes for the next cohort of intersessional activities, including what will happen with the 2016 BPFs and their outputs.

Shaping the Future of Internet Governance

Introduction

Thaigo Tavares, founder of SaferNet Brazil, introduced the session by describing how young people from Brazil were invited to participate at IGF10 in Joao Pessoa, and at IGF11 invitations were extended to an international group of nearly 80 young people. The session, he said, was designed to provoke a conversation between different generations about the state of the Internet ecosystem, exploring the different generational perspectives of pioneers and youngsters, newcomers, and younger leaders.

Five policy questions were addressed by one pioneer and one young leader.

Question 1: What lessons learned by pioneers and young people in their involvement with Internet governance are relevant to inform discussions between generations?

- Vint Cerf, one of the 'fathers' of the Internet, and instrumental in the formation of ICANN
- Grace Abuhamad, aged 24, who works on emerging technologies at the US National Telecommunication Administration (NTIA)

Abuhamad asked Cerf if young people have been troublemakers? Or have they been helpful? Cerf: "They have been troublemakers but that's what I thought I was. The people who made the Internet happen were young people way back then and the whole idea was to try something new, something different." He described some of the milestones in the history of the Internet and that some young people were involved in making that happen.

Abuhamad then asked about the emergence of stakeholder categories in Internet governance, saying that for involving youth, these may not be the best categories. "We sometimes may be pigeonholing young people into categories too early."

Cerf drew attention to the Internet Engineering Task Force, which "you can't join. All you can do is show up, and if your ideas get traction, then they'll proceed... I'd argue we should take your point and try some experiments. Instead of pigeonholing people into particular functions and categories, why don't we take problems and organise a multistakeholder discussion around the problem? That's what multistakeholderism is supposed to be about."
Abuhamad followed up by querying whether everything went as planned in developing the Internet – were the pioneers' visions right? Said Cerf: "When you're trying something new and unpredictable you can't be sure what's right and what's wrong. That's why the IGF is so important. It's also why it's so important to have young people part of this. Sometimes I think: This is like a one-room schoolhouse where we have all the grades in the same room, and depending on your skill in mathematics or reading or writing or something, you end up in a different group, depending on your capability to contribute and to learn... I think that we shouldn't be thinking about generations at all. I think we should be thinking about this

collection of people, with skills and experience of various kinds, all trying to tackle different problems."

Abuhama: "You can't necessarily have policy-neutral technologies, or policy-neutral design. One of the reasons we like the multistakeholder model, and one of the reasons we want to get more young people involved and people across generations, is because as we're designing technologies, they're infused with a certain ideology or policy, and we can't necessarily separate the two....

Cerf: "I think I agree with that. Let me get you a metaphor. It's often thought that the generals are always preparing to fight the last war, when they should be trying to figure out what the next one is going to be like. I'm sorry to bring this sort of military analogy to the table, but it's very close to what you're saying. What should be happening is that we should be trying to look forward, avoid the mistakes of the past, but try to anticipate what the needs of the future will be, and the young people who are living in this environment much more intensely than old folks like me are the ones who are closest to understanding what the good and bad side effects may be. And so your insights are important because you're young."

Question 2: What are the perceived challenges, obstacles, and possibilities for meaningful youth engagement, participation and impact in IG events and related initiatives?

- Anriette Esterhuysen, Executive Director of the Association for Progressive Communication
- Florian Daniel, aged 20, a student from Austria, where he is setting up youth IGFs

Daniel said events such as IGF can be overwhelming for those with little experience...
Esterhuysen: "I think we've made great strides in bringing young people to the IGF. But I feel that still it's about getting them here, rather than getting them to actually influence the process. It's to add diversity, in some ways maybe even to make our multistakeholder processes look better than they actually are. So how do we bring people here that represent different views, different experiences, and keep them in the process for the longer term, to make sure that their participation is about content, and give them the opportunity to learn?"
She said that coming to a global space like this can provide the inspiration and impetus for someone to go back home and do something interesting, and it's also about politics. "I think it's important that we don't depoliticise the participation of young people in the IGF...

Internet governance is about policy and different interest groups ... also trying to influence outcomes and trends in ways that will serve their sectoral interests... I think it's important for young people to be aware of that, and to be aware of those trends, and try and analyse and understand them, and assume positions on them, as well. So sometimes some of the programmes that bring young people to the IGF, they're very generic. They orient them towards the content and the topics of the IGF, but not necessarily to the politics and the potential conflicts and interest differences."

Daniel highlighted creating a better infrastructure for young people's involvement, such as with the Youth Coalition on Internet Governance.

Esterhuysen added that a benefit of getting people involved in this space early on at the beginning of their careers is that the capacity to learn and then to apply learning, there is a lot of discontinuity, particularly in governments, as officials come and go, and it would be valuable to have more people who stay with policymaking processes over the longer term.

Question 3: What are the desired and needed modes of documenting the historic record to better inform technical and policy decisions in the future?

- Hiroshi Esaki, Professor in the Graduate School of Information Science and Technology at the University of Tokyo, and Executive Director of the IPv6 promotion council
- Ephraim Kenyanito, legal researcher and policy analyst working on the connection between African ICT and media law, human rights and intellectual property rights, and international development, based in Nairobi, Kenya

Easki described how in a session on cybersecurity, because of the multistakeholder model with a lot of people coming together, "there is no common language or common terminologies", which is similar to how younger generations emerge – "So you may want to have a shared common language, a very simple document based on the past experiment… that includes the essence of the past, or history." As another example, he said that all the new applications require infrastructure to work, and it is important to know how those who built the Internet and were supported to do so, such as Vint Cerf, had a 'bottom-up' role and that the IGF today goes on respecting engineers.

Kenyanito picked up on the 'bottom-up' theme and how young people can be mentored, such as with ICAAN's mentorship program. "You're paired with a pioneer in the ICANN community and follow them around for a week and you learn a lot." Building the capacity of young people so they are involved in documenting the history, for example working with processes such as the ICANN wiki, is another example. He also spoke about providing young people with other explanatory information such as the IGF ABCs for Newbies and introducing new terms such as 'zero rating', and updating websites and documents to reflect new and historical terms.

Question 4: What are the desirable modalities of capacity development for the empowerment of future generations to join Internet governance discussions and policymaking processes on an equal footing with senior stakeholders?

- Raul Echeberria, the Internet Society's vice president of global engagement
- Bianca Ho, director of international relations at DotKids Foundation, aged 26

Ho said that young people often feel like they do not have the authority, but projects such as the IGF ABCs for Newbies show that they can proceed without official approval from anyone. "One of the things that I struggled with earlier was the lack of information."
Echeberria mentioned various youth programmes and mentorships at IGF meetings. But it is important to find new ways to keep engaging and involving young people "who are coming behind us… I think the efforts we are doing are very good but are not enough because we are not asking young people how they would like to be engaged." Helping people feel comfortable and not forcing them into participating is also important.
Ho said that, conversely, she had heard there were particular workshops that did not allow young people to speak up, and more respect needs to be made to remote participants, who may be more used to using tools such as web conferencing.
Echeberria: "Don't try to be politically correct here. We need more disruption, because we have to deal with disruptive things."

Question 5: What sorts of synergies between different generations are necessary to enable an inclusive Internet as a means for sustainable growth and development around the world?

- Stefano Trumpy, member of the promoting committee of IGF in Italy
- Kimberly Anastacio, political science student at the University of Brasilia in Brazil. She was part of CGI, the Brazilian Internet Steering Committee, and aged 21

Anastacio said that young people can see things that are wrong with Internet governance and the challenge is how to move inside the field to change them.

Trumpy said the opportunities that young people have now have been growing and there is a proliferation of new types of job, in which young people have a chance to be as inventive as much as possible.

Anastacio agreed that "many of us are employed in Internet governance organisations and maybe companies… and so I guess we are already now trying to change the system from inside.

The session continued with open questions to the panel, and included the following points:

The next generation needs to understand how can they limit or segment the lies on the Internet.

Cerf: I would like to point out that there are also lies found in newspapers, magazines, movies, television, shows, radio, and from your friends. So let's be very careful about treating the Internet especially with regard to this problem. I'm not trying to minimise anything but let's not go overboard. There is a problem – the Internet creates a kind of positive feedback loop and it can make a lie look a lot more real just because too many people seem to be supporting it. Please be careful not to go overboard.

Esterhuysen: I think people lie, institutions lie, companies lie, and I think the amazing thing about the Internet is we can use it to help understand those lies and why those lies are being told and we can do that as a community. There's counter speech. There's networking. So in fact I think rather than try to stop lying on the Internet, let's use it to contextualise it, understand it, analyse it and respond to it appropriately.

To the young people: Do you feel your academic careers have prepared you adequately for participation in discussion on Internet governance?

Daniel: I'm pretty sure I haven't heard the term Internet governance in the 5 years in my school so no they're not preparing at all, at least in Austria.

Abuhamad: I think the interesting thing that came out of the digital economy session is that we often are pushing people to get technical skills, which is important, but there also is a space in this community for people who have the soft skills, or who are interested in other parts of the policy.

Ho: I have a business degree and I'm in a startup. That has nothing to do with Internet governance, and sometimes I am in a paradoxical mode in my mind because here people talk about rights etc. and in a startup you talk about pace. I don't think the academic background is a good – there's outreach in university or high school that should be done.

Whenever there is a young person in discussions regarding Internet governance, he/she is often seen as a newcomer and lacking in being able to contribute. What do you think is the solution for bridging this gap between generations?

Esterhuysen: I think what I did when I was young was to take risks including the risk of looking stupid, and I think that's important. And I think it's also important for those who have the knowledge to be open-minded. I think this whole notion of who's an expert and who's not an expert is unhelpful. Don't be afraid to show that you don't know.

Anastacio: Specialists always say the same thing and have the same arguments over and over throughout the IGFs so maybe a way for us to break the separation is for young people to disrupt and propose new stuff during the discussions.

Teenager from Hong Kong: Most people in Hong Kong do not know there is a forum for us to express our views about the Internet. I think the government in every country should raise the awareness of the Internet

Anastacio: In Brazil, we are now starting initiatives made by young people and for young people, so maybe if governments don't pay attention to the necessity about speaking about Internet governance issues or Internet issues in our schools, you can as a young person start small groups and spread the word.

Ho: I really appreciate that there are more and more young people from Hong Kong who are coming but obviously you are taking holidays to come. One way is to participate remotely and perhaps organise a hub at your school.
Daniel: Is the beginning of December the right time for an IGF? Maybe if it were in holidays young people from the host country can attend more easily.

Tavares: In Brazil we have a programme that over the last 2 years has more than 3,000 teachers and teenagers involved in capacity building in 16 cities and the outcome is really inspiring. We have the opportunity to discuss issues like ethics, citizenship, human rights, democracy and the civil framework for the Internet in Brazil, and also the principles for Internet governance.

Glaser: Remember the NETmundial conference we had in 2014 in Brazil. So we can do it.

Internet governance is often perceived as esoteric, and not something that is within the control of the people like us. I feel like that perception needs to changes specially among youth – what are the ways in which we can change that perception beyond just word of mouth?

Cerf: Let me suggest a couple of things. The first is to continue the disruption proposed earlier today to re-form the IGF activity to integrate young people into it better. But the second thing would be to also urge others where policymaking is being discussed. That could be ICANN on the technical side, the Internet Society on the social side, and urge them to find ways of bringing young people into the discussion, so we can have a more direct effect, your opinions, on the policies that are proposed.

Esterhuysen: I think these processes are more open to participation than many others but actually influencing them can be quite hard. What can sometimes happen is people are very discouraged when they go back to the national level and there is less openness, less opportunity to be influential than there is at the global level, so we need to change the systems but we need to carry on testing them and pushing the boundaries.

Should parents always filter [the Internet] for children? What about when children need to be protected from their parents and family? What if the parents block information about LGBT, sex and child abuse?

Esaki: Engineers are working on the kind of filtering technology to provide appropriate filtering for persons based on profiling. Parents have their own principles on which content should be filtered, but they should be transparent.

Daniel: As a child, you're obviously very reliant on parents making the right decisions. In Europe, they're trying to educate parents that blocking and keeping children away is not the right way to go. But reaching out to parents is really hard.

Cerf: Well, I remember when I was 15 and if my parents tried to keep me from learning something, we found ways around that. And I'm pretty sure most of the kids I know are capable of that, too, Internet or no Internet.

Esterhuysen: I think parents use the software to avoid having to talk to their children, and having complex and difficult conversations. It's just not an effective substitute. Often there's more real harm getting to children from their parents than there is from the Internet, in terms of child abuse.

Kenyanito: I believe parents should be more involved in raising awareness about child online safety. I encourage adoption of technologies for the protection of children online that respects the rights of children. Blocking of content does not make children and young people 100% safe online. My solution to improving the safety of children and young people online would be to empower children, parents, guardians and educators to identify and delete harmful content through education and teaching them how to use technology safely and responsibly.

IGF11 THEMES

ACCESS AND DIVERSITY

Access and diversity were recurring themes throughout IGF11. In particular, the conference highlighted:

- Access to the Internet in ways that support the Sustainable Development Goals (SDGs)
- Bridging digital divides by providing both access and training in the use of ICTs and the Internet
- Gender and access, specifically issues concerning women
- Equitable access to knowledge and culture, including in public places
- Access to education.

The main sessions featured many points on access and diversity. In 'Assessing the role of Internet governance in the Sustainable Development Goals (SDGs)', it was noted that target 9C of the SDGs calls for universal and affordable access to the Internet in least developed countries by 2020. But at the end of 2016, 53% of the world's population, 3.9 billion people, did not have access to the Internet. In the 48 least developed countries, which comprise 12% of the world's population, only about 1 in 7 people were online by the end of 2016. "We need to think of bold new steps to rally all actors to put the Internet in the service of the poor, women, disabled people and indigenous populations," said one of the speakers.

It was noted that the multistakeholder model has facilitated significant accomplishments over the past decade, and every one of the SDGs "provides a compelling reason to achieve universal affordable connectivity and there is a clear, tactical roadmap within the SDG agenda that compels us to do so and is our guiding way". Examples were given about how access can address goals on health and wellbeing, education, gender and more.

A key point was made several times – that people must be put first, as there is a tendency to talk mainly about technology, and that "those in the development community are not persuaded yet that the Internet is as important for development as many of us think it is here". The original goal of the World Summit on the Information Society (WSIS) is for a people-centred information society. It is also a point that underpins all aspects of working towards the SDGs.

Other points made in the SDG session:

- 'Connecting the next billion' is a key value that informs conferences of many types around the world, and for which the IGF plays a central role
- Effective multistakeholder institutions are needed to guarantee values like universal and democratic access to the Internet and to knowledge, and to avoid Internet governance being driving by markets and the interests of governments
- Public-private partnerships and local stakeholder groups are needed for projects such as extending the Internet to remote areas in countries
- The engagement, education and empowerment of users should be a fundamental objective of the IGF, especially national and regional IGFs, as a large part of Internet governance remains in the hands of private companies and other non-state actors
- Governments need support as some have many responsibilities that can distract from critical issues like Internet infrastructure development
- Affordability of data on the Internet is a major concern in some countries and will greatly hinder its reach to communities such as farmers.

The main session on 'Sustainable development, Internet and inclusive growth', addressed the barriers for inclusion, capacity building and the importance of local content and language. Among the access and diversity points:

- Internet access should be a constitutional right
- National broadband plans should address both supply- and demand-side needs
- The poorest and the most marginalised users often only have narrow, unstable connections and on low-powered equipment. This means Internet services should have minimal technical and resource requirements
- Interactive content and services can empower marginalised groups more than only 'passive' content
- Basic literacy skills are essential for everyone to access the Internet
- At the infrastructure level, innovation is needed to enable last mile access to remote villages that are not on national power grids and/or pose geographical challenges.

See also the theme report on 'Sustainable development and the Internet economy'.

Presentations at Dynamic Coalitions main session included several access and diversity themes:

- The DC on Community Connectivity (DC3), new in 2016, shared its analysis of community networks and their relationship to connectivity, finding not only that the networks help provide access but render it sustainable over time
- The DC on Accessibility and Disability (DCAD) has annually produced accessibility guidelines which have helped to greatly improve IGFs for persons with disabilities, including the 2016 one, and that the next target will be the training of on-site IGF staff. DCAD is working to promote the standardisation of key technologies, including the Internet of Things, in continuous support of persons with disabilities
- The DC on Public Access in Libraries (DC-PAL) is committed to the issue and study of connectivity, particularly for under-served communities. It reminded participants of the vital role libraries play in providing open, accessible spaces for Internet use in rural and remote areas, as well as in delivering locally-produced content and government services online
- In its latest publication, the DC on Net Neutrality (DCNN) has looked at the relationship, or what is often seen as the tension, between net neutrality and zero rating. Among the views presented in DCNN's book, both favouring and critically deconstructing zero rating, it questions the notion that the zero-rating policy is an important enabler of access, in light of the several other measures and policies that accomplish the same objective.

For the first time, National and Regional IGFs ran a main session to highlight many initiatives, especially access and improving opportunities for the unconnected and underconnected. Messages from the session confirm points made in other main sessions and workshops and include:

- The Internet needs to be preserved as an open, secure, stable, resilient and trustworthy space
- Access and enhancing opportunity for connecting the unconnected include national and sub-regional issues, such as identifying underconnected groups, like women and youth or those in remote areas in a country or sub-region/region
- While there is a need to have access to broadband and availability, the Internet needs also to be accessible in terms of practices, through capacity building, useful content, local languages, etc.

- Internet access with mobile technology should be seen only as a temporary solution because of the limitations it brings
- More efforts are needed at national level and in the regions for multistakeholder groups tp implement IPv6, fibre optics, and other new technologies like white space technology.

Gender and access also featured in the IGF's Best Practice Forums main session. In 2016, the IGF furthered its seminal work on 'Policy options for connecting and enabling the next billion(s)' by investigating challenges and opportunities for addressing and overcoming barriers to meaningful Internet access, promoting meaningful access in diverse contexts and regions, and ensuring that access also supports the achievement of the UN Sustainable Development Goals. See the theme report on gender and youth issues for more on women.

One aspect of access was discussed in the final main session – that of how young people can be empowered to take part in Internet governance conferences and discussions, including those organised by the IGF. See also the theme report on gender and youth issues for more.

Workshop – An 'Internet of Women' by 2020: WSIS vision into reality

Messages from this workshop, which also cross over into the gender and youth theme, include:

- It is important to continue to develop our understanding of the gender digital divide by disaggregating relevant data
- Building capacity and digital literacy are key factors in narrowing the gender digital divide
- Mentoring (by men and women) in the Internet economy is an important tool for bridging gaps and creating meaningful opportunities for engagement and empowerment
- Fear is a factor that inhibits the engagement of women and girls online. Therefore, creating a safe online environment for women and girls is an issue of top priority.

Claire Sibthorpe gave highlights of a GSMA report, Bridging the Gender Gap, noting that women feel much safer with mobile applications than desktop or laptop computers. Studies have also found that the barriers to online engagement are not necessarily gender related. There is a call to action for mobile operators through the Connected Women initiative, which teaches women about mobile Internet, mobile apps and mobile money.

Nancy Hafkin, Women in Global Science, said there are barriers for women in the knowledge society; it is not just a matter of technology, and most acute in Africa. These gaps are caused by poor health, primary education or less, speaking/reading no international languages, and the barriers presented by living in patriarchal society or embedded in customary law. There is a lack of implementation of gender aspects in Internet policy. It is crucial to focus on communities and to bring out national plans.

There was agreement that we need disaggregated data on gender. There are studies on social norms that show for example that when women get harassing calls from men, their husbands and fathers think that they have invited it; the second most popular app in Kenya is a call blocking app. In India there are studies on the impact of pornography; women are uncomfortable visiting Internet centres because they do not want to be exposed to the upsetting content downloaded by men.

Workshop – Building demand-side capacity for Internet deployment

These were two related workshops on demand-side factors.

In the first, on Internet adoption, the moderator opened the discussion with case studies from the 1 World Connected project, illustrating some of the ways in which initiatives in Uganda and India have sought to bridge the demand gap in ICT skills training.

Ellen Blackler (Disney) highlighted the importance of focusing on value up the supply chain, noting Triggerfish, a story lab in South Africa, which seeks to provide locally relevant content and entertainment. Robert Pepper (Facebook) spoke about Facebook's Free Basics programme, and its use cases by different organisations to build demand-side capacity. Sonia Jorge (World Wide Web Foundation) highlighted the gender element to ICT skills enhancement, and the research that suggests that policy can be a driver for demand-side capacity building. Manu Bhardwaj gave the perspective of the US Department of State's Global Connect Initiative, and emphasised the role that policymakers can play to enhance demand-side capacity. Alejandro Pisanty (Internet Society) urged the discussion to move beyond just thinking about skills training, and consider value addition through means such as e-commerce, and argued that applications that provide classroom learning can also help push demand.

In short, experience shows that policy can play a critical role in building and augmenting demand-side capacity to improve Internet adoption. Demand-side capacity building needs to look beyond traditional digital literacy and skills training, and account for value addition through sources such as social engagement or e-commerce.

In the second workshop, on capacity, it was stated that video is the future of the Internet; that access to internet is not sufficient for adoption – the cost of access/smartphones and availability of relevant content matter greatly; stimulating and cultivating local content creation and digital citizenry/empowerment will drive adoption; but creation of content is hard and risky.

Panelists spoke about the low adoption rate of the Internet globally, including in developed areas. The lack of interest in the Internet is tied to a dearth of relevant local content (in local languages) and insufficient digital skills, coupled with phone unaffordability.

Several initiatives were mentioned, such as Chicos.net, a site for children to learn digital citizenship and digital literacy skills; and AT&T's Escuela Plus programme whereby ICTs are used for educational purposes in 7,000 schools and involving 15,000 teachers. The programme curates content and marries digital skills with traditional skills.

Content creators discussed the challenges of creating relevant, empowering, and engaging local content. Stuart Forrest highlighted Triggerfish's success (over 20 years) of creating animated content by incorporating local craftspeople to provide images. He also spoke of Triggerfish's recent contest (Story Lab) to attract creators in Africa. This contest led to panelist Malenga Mulendema's success as an animation creator, which she chronicled for attendees. Bobby Bedi (Kaleidoscope Entertainment) spoke of the key pillars of effective communication – engage, entertain, inform, educate and enlighten. Venture capitalist Aldo Farrah underlined the riskiness of content creation and the challenges creators face in accessing the necessary resources to effectuate their vision.

It was understood that challenges remain. Government policies that overly tax entertainment and telecoms services are barriers to development, as are policies that stifle payment for content, such as laws that make use of PayPal illegal.

Workshop – Initiatives connecting the unconnected: Where's the data?

Elena, Estavillo, from Mexico's Federal Telecommunications Institute, gave a presentation on the collection and use of data by her regulator to analyse trends to inform policy decisions.

Alison Gillwald (Research ICT Africa) shed light on the lack of public administrative data at a large scale in the realm of ICT statistics, both on the demand as well as the supply side. Hernan Galperin (Annenberg School for Communication) provided perspectives from Latin America, where the challenges are primarily on the demand-side with over 200 million people not using the Internet despite having access. He also said that there was a need to make the right datasets visible, and avoid the use of unrepresentative sample sizes where possible as it could influence policy adversely.

Helani Galpaya (LIRNEasia) spoke on the opportunities that can be seized by adopting a data-driven approach to policymaking to connect the unconnected, and spoke of the lack of funding for the collection of data through large scale representative sample surveys of households, especially for researchers from the developing world.

Rajan Mathews (Cellular Operators Association of India) provided a business perspective, noting the privacy concerns surrounding data disclosure. He admitted that while there was a vast trove of data with operators, one must be cautious about the use of such data. Further, he argued that data-driven approaches to policymaking are key, and said that regulatory capacity to process and utilise this data meaningfully must be inculcated in the relevant circles.

Moctar Yedaly (African Union Commission) spoke from the perspective of a policymaker, and said that timely transmission of data to the right sources is of importance and that the form of transmission of this data in an easily digestible manner is key.

The discussion included a note on methodology and its importance, as well as an emphasis on the relevance of the representative nature of datasets, and concluded:

- There is a dire need for open, publicly available large scale administrative data sets
- Visibility of available data to inform policy is of utmost importance, as bad data or unrepresentative datasets can often skew policy decisions
- Data needs to be made accessible to policymakers at the right time and in the right form for it to be effective in its utilisation.

Workshop – The role of judiciary systems and Internet governance

This workshop focused on a particular type of access, namely the challenges facing freedom of expression on the Internet.

The session opened with a global overview by Toby Mendel, Centre for Law and Democracy, who highlighted the key challenges facing freedom of expression with regard to the Internet. These include judges' lack of understanding of the technical implications and the impact on freedom of expression of their decisions.

Another issue is the lack of knowledge of available options, leading to overbroad restrictions such as blocking access to different platforms to a disproportionate extent, he said.

Hawley Johnson, from the Global Freedom of Expression project at Columbia University, spoke on her organisation's Global Database of Freedom of Expression Case Law. Launched in 2015, the database now includes nearly 800 cases from 125 countries, and seminal cases from Latin America are available in English and Spanish, with the support of UNESCO and other partners.

The Organization of American States' Special Rapporteur on Freedom of Expression, Edison Lanza, opened discussion on the 'right to be forgotten' in the region, the importance of journalists' safety and source protection, and the pressure that judges receive to censor content.

The question of the right to be forgotten was also presented by Carlos Affonso Souza, Institute for Technology and Society, Rio, who spoke about its increased presence in cases in Brazilian courts as an example of the influence that a decision in one country can have on another.

Marcel Leonardi, senior public policy and government relations counsel at Google Brazil, discussed transparency regarding judicial decisions, such as through the Marco Civil Observatory, and called for more research related to decisions in the lower courts, where most issues arise. He also mentioned that, in Brazil alone, Google is mentioned in more than 3,000 cases currently being assessed by the country's courts.

Eugenia Di ́az de Le ́on, formerly of the Mexican school of judges, addressed the conceptual framework and history of legislation in Mexico on the right of reply.

Several speakers touched on the challenge introduced by the volume of cases related to Internet issues. The idea of a specialised court on Internet issues was mentioned, but largely discarded by the panelists since the range of issues spans many areas of existing law. Online dispute resolution and an independent administrative body were also proposed as potential alternatives to processing cases through the courts.

Workshop – Public policies to increase accessibility

One of the main points discussed was the role of governments, especially the role of regulators in increase the accessibility and inclusion of women and girls, people with disabilities, indigenous people, and other vulnerable groups. In this regard, Mexico's Federal Telecommunications Institute shared its experience in promoting accessibility. For example, it has issued guidelines on how telecoms and broadcasting should be made available in an accessible way.

The Connecting Communities Tour by Mignon Clyburn, one of the commissioners at the US Federal Communications Commission, was mentioned.

Another point of discussion was the market. It was said that the marketplace typically addresses consumer needs by producing products and services that consumers want, but this does not always occur when it comes to devices and applications that can enhance the lives for people with disabilities. This is a market failure that occurs because the disability market is too small as people with disabilities earn lower incomes and have less purchasing power.

Therefore, accessibility requirements are needed to avoid further reduction of the market. In this regard, the importance of open standards was noted to allow the development of low-cost and affordable assistive technologies, and interoperability of devices.

The inclusion of indigenous people was discussed, and it was recognised that they are among the most marginalised.

The panelists agreed that there is a lot of work to do regarding smart cities and the Internet of Things to increase accessibility on devices. It is important to make sure that the new technologies bring people closer together.

Also, it is important to encourage economic competition, universal service obligations, and recognise the pervasiveness of communications in commercial transactions.

Workshop – Fostering digital capacities for decent life in MENA (Middle East and North Africa)

Participants heard that an underutilised strength of the region is its young population with a common culture and language. But the region also faces the challenge of connecting schools to the Internet and developing quality online content. Moreover, educational reform and the respect for intellectual property are two key issues.

A significant challenge too is the weak efficiency of the ICT sector, as well as limited research, development and innovation. The Internet ecosystem makes multistakeholder interaction more challenging.

The discussion highlighted the positive role of technology zones and business incubators in the region; Gulf Cooperation Council (GCC) countries are investing in ICT, especially in infrastructure and services. There is also now a strong movement of Internet-based entrepreneurship across the region led by young people.

Other speakers highlighted increased investment in infrastructure both from the government and from private entities. But it was stressed that there are not enough Internet exchange points (IXPs). Speakers added that it is difficult to measure the impact of infrastructure on sustainable development.

The role of women in the regional economy was discussed. One speaker said that women in the MENA region are unexploited human capital; however, it is difficult to bring MENA women into the labour force.

Among the recommendations:

•Developing the ICT sector as a key tool for moving towards a knowledge-based society
•Creating policies for educational reforms and the respect for Intellectual property
•Expanding institutional capacity building
•Improving capacity building within government and the private sector
•Deregulating regional telecoms services
•Promoting gender balance in the economy and greater economic inclusion of women
•Developing local Internet content and fostering its usage.

See also the DiploFoundation report.

Workshop – Multicultural and multistakeholder capacity building

Key messages from this workshop included:

- To create a multistakeholder model that is truly inclusive, subject matter needs to be built from the bottom-up
- Language is still a barrier a participation and thus limits multiculturalism and multilingualism, which should be an inherent part of any true multistakeholder process
- While there are tools and opportunities available to increase participation in Internet governance debates, and so build a more balanced and diverse model, there are still a

lot of improvements that we can work on to increase participation for those who would otherwise not be able to join.

The moderators described the increase in capacity building initiatives since the first IGF, including national and regional IGFs, schools on Internet governance and other dialogue spaces. The discussion examined the success of these initiatives through shared experiences and outcomes.

Barriers include demonstrating relevance, the need for outreach, and economic barriers. Demonstrating the relevance of Internet governance and 'debate space' in particular is a reflection of the content. Panelists said it is important to cover a variety of topics and invite a diverse set of presenters and speakers. To address the outreach issue, they discussed the importance of the bottom-up approach. Building subject matter from the bottom up not only ensures that content is relevant to a variety of stakeholders, but that it is also engaging and encourages people to take part in the process.

Regarding economic barriers, should events be free or paid? Should participants be remote or in-person? Some panellists suggested that paying a small fee would make the participants value the time more, but most believed that free participation is the best way forward. However, it was mentioned that free is not really free, because travel and accommodation costs are beyond the means of many. This led to the panel raising the importance of fellowship programmes and the value that they bring by giving a voice to those who would otherwise not be able to attend the events in person. This also brought up the effectiveness of participating remotely. Most panellists agreed that remote participation tools are valuable and make Internet governance spaces more inclusive, but it was acknowledged that it is not equal to on-site participation

One major issue brought up by the audience was that while discussing a topic that involves multiculturalism and multilingualism, the session was not translated and how this is a barrier to the type of participation that we are seeking.

Another question was about creating a national IGF and how to identify the content for the forum that is engaging and inclusive. There were a variety of suggestions, but the common denominator was that the subject matter needs to be built in a bottom-up fashion.

Workshop – Internationalised domain names (IDNs): A key to an inclusive and multilingual Internet

The presentation, by Nalini Elkins of Inside Products, discussed the current state of IDNs and international email. Problems in this area are complex and require multiple sets of expertise to resolve. Elkins suggested a multistakeholder model to resolve the problems.

One participant suggested that there should be policy collaboration as well as technical collaboration. A new vision of the Internet was proposed: an Internet that is IPv6, multilingual and disability friendly.

Other problems with IDNs are higher prices and lack of availability. That is, multilingual domains could not be bought because registrars did not sell them. It was brought up that China has a good deal of multilingual support. Since this is within the borders of China, it is difficult to gauge the extent of penetration.

Policy and technical collaboration should happen, and the moderator and organiser committed to setting up an email list where discussion can continue.

A better survey of the extent of penetration of IDNs throughout the world is needed, and we also need to understand the requirements and problems – then we can build a multistakeholder coalition.

Workshop – Empowerment through quality online education

Key questions posed at this workshop were:

- Which policies should be developed for educational content quality ranking on the Internet?
- How open educational resources (OERs) could serve the right to education and better human rights awareness?
- Is it possible to decrease the gap in the quality and quantity of information provided for education between developed and developing countries?
- Do OERs increase or lower the quality of education in institutions of higher education?
- How can the global South deal with the issue of access to OERs?
- What benefits are OERs offering to educators and learners in higher educational institutions?

Sarah Kiden, from Uganda Christian University, said that policies for quality ranking and quality control in online education and online educational resources should be a collective effort by stakeholders.

Google's Patrick Ryan added that open technologies can help to transform education. In his view, there are three areas where improvements are needed to give teachers more time to teach and students more time to learn: better communication, creating and collecting assignments, and staying organised. All these could be facilitated by technology.

Andrey Shcherbovich, from Russia's National Research University Higher School of Economics, gave an overview of international instruments that tackle education-related aspects, such as the Universal Declaration of Human Rights, the Council of Europe Guide to Human Rights for Internet Users, and the Charter of Human Rights and Principles for the Internet developed by the Internet Rights and Principles Coalition of the IGF. He outlined two key challenges: recognition of online education as a commodity for public good, and the recognition of academic degrees.

Olga Cavalli, from the Internet Society, said online educational tools could benefit from feedback from the community: both from students who use the content, and from colleagues. Argentina has developed online training programmes that allowing individuals to acquire certification in certain fields.

Cristina Ca´rdenas, general coordinator of @prendre.mx, a new digital inclusion platform from Mexico's Ministry of Education, described its components – professional development in information and communications technologies, digital educational resources, equipment connectivity, teacher training, and content creation.

The issue of ensuring quality online education in rural areas of developing countries was raised, where electricity and other critical recourses are not available. Also there is a problem of a lack of educational content in local languages. But online education is a powerful tool that can increase quality of lives of people, especially those in rural and isolated communities with limited access to traditional education.

It was also underlined that, while online content is often available, sometimes it cannot be used because of the lack of connectivity and technical equipment in schools. It might also be different in terms of regulation and policies across countries.

Users also need to be guided on how to choose content and courses, and there is need to measure quality in online education.

The relevance of existent educational content to labour markets also needs to be examined – quality education cannot be taken into consideration without direct linkage to employment.

Overall, relevant educational content must empower the most vulnerable groups of people and increase their influence on the local economy and raise their quality of life.

Workshop – How to create relevant Internet governance content

Main messages from this workshop included:

- Creating high-quality, relevant Internet governance is essential to building capacity for a strong multistakeholder model that is truly inclusive, multicultural and multilingual
- In order to promote a multicultural environment, we need to respect the important role that language plays in culture
- To engage a diverse set of stakeholders from a diverse set of regions, localised content will need to be developed in a bottom-up way that reflects the views and values of the groups that we are trying to reach.

The moderators described the importance that culture and language play in educating people and demonstrated the importance of Internet governance. But they highlighted the difficulties in creating and maintaining this content in a way that addresses the need for multicultural and multilingual content in a sustainable way. About 75% of the audience spoke a language other than English as their native language, providing a clear example of why relevant Internet governance content is so important.

A variety of obstacles were identified from both sides of the content issue. On the content creation side, panelists raised a number of key issues, including the difficulty of translating technically dense subject areas such as cybersecurity, the additional complications created by non-Latin scripts, engaging stakeholders that don't understand the significance of the material, and the differences that exist between regional dialects of the same language.

From this set of issues, there was general agreement on certain points. Several panellists concurred that issues need to be presented to different groups of people in different ways for the message to resonate with them. This was considered important not just across cultures, but also stakeholder groups. The panel also shared experiences about the difficulties they face in producing translated content. Panelists agreed that there is a demand for content in localised languages, but several stated that the capacity to produce that material is not available. It was highlighted that the workshop was not translated, which inherently limits and/or excludes them from important conversations. The purpose of this workshop was to find ways to address realities like this one.

For dealing with content at live conferences and events, participants suggested several possible ways in which the need for multicultural and multilingual content could be addressed. One recommendation is using remote participation tools, such as live transcripts for more effective in-person participation for those who speak a language other than English. It was acknowledged that this is not a perfect solution, but could be an improvement. The general agreement, however, was that simultaneous translation is the best solution that we currently

have for enabling diverse participation and that it is something that Internet governance discussion forums should invest in.

For creating content that is localised and relevant, a number of methods were suggested, which in most cases can work together. First, each audience may need customised content to recognise the significance of the issue. This requires understanding the audience. This transitioned into the second suggestion, which is to identify leaders in communities who can act as an ambassador for that community as well as a source of knowledge for localised content.

Finally, it was suggested that we do not minimise the importance of translating content just because we find that a lot of people speak sufficient English. This was raised for two reasons. First, it does not acknowledge or respect the fact that those who do not speak English still have an important voice and role in the governance of a resource that will be connecting to billions of non-English speakers over the next few decades. Second, if English is used as the only language, we inherently lose some of the cultural inputs that are an ingrained part of any language.

Workshop – Sustainable accessibility goals for persons with disabilities

This workshop was organised by the Dynamic Coalition on Accessibility and Disability (DCAD) and the Global Initiative for Inclusive ICTs (G3ict). It is also flagged up in the human rights theme. Key issues raised included:

- Countries have to immediately develop the means to monitor and report on the SDGs' implementation of access to ICTs and the Internet for persons with disabilities using the latest data and statistics
- Requirements for the public procurement of accessible ICT in Europe and the US should be harmonised to promote universal design of products, environments, programmes and services to make them usable by persons with disabilities globally
- It is necessary to build an available, accessible and affordable mobile and Internet service for small island developing states so their citizens may have more opportunities to participate in the Internet society, taking into account accessibility for persons with disabilities
- An Internet relay service that provides real time access for persons who are deaf, voiceless and others with specific needs should be available as an inter-country service, and recognised as an international standard for interoperability.
- Universal design should be deployed in the development of ICT technologies to avoid barriers for persons with disabilities and prevent expensive refits.

Francesca Cesa Bianchi (G3ict) presented the G3ict CRPD 2016 ICT Accessibility Progress Report, which showed both a positive impact of the Convention on the Rights of Persons with Disabilities (CRPD), and an opportunity for further progress as well as advocacy activities in the ICT field. She highlighted the necessity of more statistics and data and problems for accessibility by persons with disabilities and especially those in the global South countries. She emphasised also the need for progress on the accessibility of government websites.

Gerry Ellis (Feel The BenefIT) described the big impact that the public procurement of accessible ICT makes on the market, and the importance of harmonisation of the two major requirements for the public procurement of accessible ICT: European EN301549 and the US Section 508 of the Rehabilitation Act. This harmonisation will be beneficial for persons with disabilities, industry and society as it will further promote interoperability and affordability.

Gunela Astbrink (Women with Disabilities Australia) explained the ICT accessibility difficulties caused by geographical, socioeconomic and cultural characteristics in small island developing states, especially in the Pacific. She stressed that persons with disabilities in the Pacific are suffering from double disadvantages due to the lack of educational and employment opportunities and to affordability technologies. She introduced a pilot project conducted in Vanuatu showing that many persons with disabilities there don't know about the Internet.

Judy Okite (Free Software and Open Source Foundation) questioned whether the development of technologies is further widening the gap for persons with disabilities and hindering inclusion, especially in developing countries. She emphasised the importance of credible and accurate data.

Andrea Saks (DCAD coordinator) introduced the challenges in the development of relay services for persons with disabilities. She stressed the importance of accessibility standards for global interoperability, effective regulations for the inclusion of persons with disabilities, and avoiding new barriers that are being created by new technology and especially proprietary technology, emphasszing the importance of the involvement of persons with disabilities in the standardisation process, and that the concept of universal design is deployed from the start.

CRITICAL INTERNET RESOURCES

The 'nuts and bolts' of the Internet are essential and underpinning components of many Internet governance topics, given the importance of standards and technology to providing good quality access and content where it is needed.

A milestone was reached shortly before IGF11, namely the successful transition of the IANA (Internet Assigned Numbers Authority) functions to the multistakeholder community in October 2016. The transition was finalised after many months of planning by community volunteers, leading to productive exchanges about the post-transition IANA and the new community-based accountability mechanisms to ensure transparent and stable management of this crucial Internet function. At the IGF, various workshops and sessions endeavoured to learn from the successes and challenges of this important multistakeholder exercise.

The main session on Best Practice Forums (BPFs) included reports from the BPF on Internet exchange points (IXPs), which collected best practices that have contributed to building strong and successful IXPs. Exchanging traffic at an IXP has a number of benefits that can contribute to a more affordable, stable, faster and more reliable Internet of a higher quality in a region. The success of an IXP is measured by its ability to sustainably contribute to the development of its local Internet ecosystem. The BPF on IXPs focused on the management and operation of an IXP and identified factors that can contribute to success. More on IXPs and also content delivery networks (CDNs) were discussed in a workshop (see also report below).

There was also a report from the BPF on IPv6, the Internet's addressing system that was developed to deal with IPv4 exhaustion and to make the Internet future-proof. The fast-growing number of networks that already supports IPv6 today is proof that IPv6 is a technically feasible option for business. This BPF has collected case studies on commercial experiences with IPv6 deployment to better understand challenges and incentives (see also report below).

The Internet of Things (IoT) was highlighted in several places in the IGF11 sessions, including in a dedicated Dynamic Coalitions session. Issues and challenges such as standardisation, interoperability, and security are very similar to those the Internet community dealt with in earlier days, and offer substantial opportunities for multistakeholder cooperation and mutual learning.

A point raised in the main session on [assessing the role of Internet governance in the Sustainable Development Goals (SDGs)](#) is that a large part of Internet governance remains in the hands of private companies and other non-state actors because they control critical parts of the Internet infrastructure, which makes it imperative that wider society understands what the critical resources are and how to develop policy that brings them into the accountability of the public domain, and in line with open standards.

Indeed, in a [workshop on internet standards](#) (see below) it was said that the availability of open Internet standards is not the problem, as there are already a wide set of agreed standards. The problem is with the implementation process with challenges such as different implementation approaches depending on infrastructure maturity among countries, and prioritisation of standards: which are essential?

Workshop, Best Practice Forum and Roundtable Reports

View on the Internet of Things (IoT)

Two important sessions at IGF11 were a session run by the Dynamic Coalition on the IoT, and a workshop.

[Dynamic Coalition on the Internet of Things](#)

Since the 3rd Internet Governance Forum (IGF) meeting in Hyderabad (2008), IoT has been on the agenda for multistakeholder discussions of all IGFs. There is an understanding that good practice from a global, multistakeholder perspective includes recognition of the need to take ethical considerations into account from the outset in the development, deployment and use phases of the IoT lifecycle, and to find a sustainable way ahead of using IoT to create a free, secure and enabling rights-based environment. In 2015, this resulted in a draft statement of IoT good practice that was been put out for public comment and updated taking into account the DC IoT discussion at IGF10 (Joao Pessoa) and subsequent DC IoT meetings during 2016, leading up to an underlined paper. This paper provided the starting point for the DC IoT workshop during IGF11.

Several statements were made at the session in response to important questions about IoT:

- The 'ethical approach' in IoT should find a balance in being 'sufficient' from a civil society point of view, 'do-able' from a business point of view, and sustainable from a technical point of view
- There is a big need to raise IoT awareness with citizens and consumers. In this, people should not be expected to be technical experts.
- Proper security avoiding easy tapping of IoT equipment is a necessity. This will need to come with appropriate attribution of responsibility in ensuring this is handled sufficiently.

Further, it was asked: Do we need a 'principle' on using the most available technology possible to stimulate developments in more regions around the world? And is there value in developing an ontology (formal naming) for IoT applications on privacy, security, and safety?

IoT is still in early stages, but has been around long enough to have consequences. The aim of the DC IoT is to examine what 'good' looks like from a global multistakeholder perspective, and how sustainable development of IoT that is trusted, useable, accessible, affordable and profitable (in societal and/or business sense) can take place.

During this session, there was an emphasis on applications in developing countries: more needs to be done, but with low bandwidth systems these technologies can already bring a lot of benefit (examples from agriculture were given) and capacity building is important. But complexity will continue to go up, and we will need to increasingly use technology to deal with complexity; not least, there will be autonomous IoT ecosystems that base their decisions on machine learning and eventually artificial intelligence. Data protection and privacy concerns will also arise increasingly with IoT.

Safety of devices is a priority, and should be enabled by suppliers but also includes users taking responsibility, which will take time and need awareness raising activities. This could come from a code of conduct rather than legislation. A simple measure for security could be not deploying devices with default passwords.

Google, ICC Basis (International Chamber of Commerce) and the National Telecommunications and Information Administration (NTIA) have committed to explore ways to contribute. The Internet Engineering Task Force (IETF) has set up a focus group on IoT and will continue to contribute to the work of the DC. The leadership of DCIoT called for more people to get involved in its work, including between IGFs.

Workshop – The network of networked things: Finding the Internet in IoT (Internet of Things)

Key messages from this workshop were:

- There is a need to encourage participation from IoT developers in multistakeholder forums and technical communities such as the Internet Engineering Task Force (IETF)
- There is interrelation between industry self-regulation and standards on the one hand, and government regulation on the other
- There is concern about security of devices, and what motivating forces can be employed to encourage greater attention to security by manufacturers and network developers.

Participants heard that the rapidly growing IoT isn't different to the Internet but rather part of its evolution and is therefore covered by existing policies. The architecture of the Internet encourages cooperation between network operators, who engage with one another on policies and standards, and form peering arrangements for mutual benefit, which result in interpersonal networks and relationships. But no similar structural factors exist to encourage cooperation between IoT developers. There is a need to encourage participation from IoT developers in multistakeholder forums and technical communities such as the IETF, and this outreach should include a community building element.

A major topic raised was the interrelation between industry self-regulation and standards on the one hand, and government regulation on the other. The IoT creates requirements for semantic interoperability between a range of different devices and applications. Industry has been quick to recognise this need and a lot of work is already being done on shared standards. Qualities like effective communication and the ability to work in a multistakeholder environment will be important in these efforts. The US Department of Commerce's National Telecommunications and Information Administration (NTIA) has also started a multistakeholder process focusing on the upgradeability and security of devices and believes that the private sector should lead the way in terms of standards.

Some actors, particularly some governments, hold a different view, preferring to predefine technical standards in their countries to achieve certain outcomes. Some participants argued that this tendency to regulate should be resisted, as it is impossible to know how the market will play out, and countries with the heaviest approach to regulation are often those with the most potential for explosive IoT growth, as their industries are already mobile-based.

Policymakers should be encouraged to first explain their goals, as industry may be able to address those goals without the need for regulation.

While established companies could suffer greatly from selling unsecure IoT devices, fear may not be an adequate motivator. This can't be left entirely up to the market, as there are commercial pressures to release products in a timely fashion that conflict with the need to ensure adequate safety measures are built in. There is also an inadequate understanding of cause and effect among consumers. Aside from personal security and privacy concerns, there is the issue of devices being used to attack the Internet itself. It was noted that the Messaging, Malware and Mobile Anti-Abuse Working Group (M3AAWG) is working on recommendations for IoT developers to help them make their devices more secure. The IETF is working on something similar.

There was a suggestion that identifiers could be used to create a 'trust zone' for IoT devices. However, requiring permission for devices to connect to the Internet is a drastic departure from the current approach and not likely to be supported. A framework allowing 'consent in advance' could potentially be used to tell devices what to do without having to be manually configured and updated. It was noted that the European Union is working on a trusted IoT label.

In terms of a practical IoT implementation, one IoT network developer noted that they had run into a lot of challenges in the technical and standardisation realm. There was also a lack of blueprints or implementation plans they could use. A 'wait and see' approach is not an option for governments. While manufacturers can learn from failure, in the case of a local government implementation, failure means creating legacy systems that would last a decade or more.

Workshop – A post-IANA (Internet Assigned Numbers Authority) transition

This workshop, organised by the Internet Corporation for Assigned Names and Numbers (ICANN), started with Leon Sanchez, co-chair of the Cross-Community Working Group (CCWG) on accountability, describing the history of the IANA transition process, explained what the process means, and described IANA's functions. He highlighted some important conditions of the process – the proposal for the transition had to:

- Receive wide support from the community
- Foster and enhance the multistakeholder model
- Maintain or guarantee the security, stability, and resiliency of the Domain Name System
- Satisfy the expectations of IANA services clients
- Maintain the nature of the Internet as a free and open resource.

He stressed the important role of all communities that took part in the process and of the bodies that steered the process – the CCWG and the IANA Stewardship Transition Coordination Group (ICG).

The second part of the workshop consisted of panellists' experiences from the IANA transition process, focusing on challenges, and positive and negative experiences. In most cases, the speakers agreed with other panellists and reiterated points such as the added value of the multistakeholder model (different views and knowledge), the useful and proactive role of coordination bodies, and the dedication of the communities to finish the task.

Points made by speakers from various organisations included:

- The Internet Society, Argentina, identified diversity as a challenge and pointed out that the representation of some regions was unbalanced
- Microsoft suggested that the success of the IANA transition process confirmed the value of multistakeholderism
- Japan Network Information Center (JPNIC), identified some success factors of the transition: people who represented various groups did not have predefined positions; the communities respected each other's expertise; and the process requested each of the three operational communities to develop its own part of the proposal and not to try to draft everything.
- The African ICT Alliance appreciated the consistent feedback from working groups, but asked for more outreach to include more people and to build better knowledge capacity in the people engaged in the process
- The ICANN board reported that the process was transparent and easy to understand and that even newcomers to the process felt included
- NetChoice named three success factors: first, the importance of the task itself; second, it was the community that initiated the accountability plan, not the ICANN board or the US National Telecommunications and Information Administration (NTIA), and third, the political deadline of the end of the Obama administration in 2016.

There was also an exchange of the nature of the multistakeholder process used and how 'transportable' this was to resolution of other Internet governance processes such as those discussed in UN bodies (e.g. the ITU).

Those interested in being involved in the accountability work at ICANN (or in any other capacity) should visit ICANN's website (www.icann.org) or mail Nigel Hickson (nigel.hickson@icann.org).

Views on Internet exchange points (IXPs)

The following reports are from a workshop and Best Practice Forum (BPF).

Workshop – Content delivery alternatives: Intertwining of IXPs and CDNs

This workshop focused on Internet exchange points (IXPs) and content delivery networks (CDNs). Key issues raised were:

- Challenges in creating a common interest base in the Internet service provider (ISP) community to develop IXPs and the importance of content in this process
- Criteria for implementing CDNs in the perspective of a content provider (in this case Google)
- Importance of implementing CDNs to enhance bandwidth management and the development of small and medium ISPs
- Implementation of the Open CDN initiative in Brazil.

The workshop focused on the challenges of bandwidth management in a context of increasing demand for content, considering that video streaming is one of the main drivers of increasing demand. Several policy initiatives aim to help traffic to stay in a location, and in particular the idea of implementing CDN servers within the infrastructure of large and medium ISPs, which are closer to end users. This has become widely accepted among the ISP community. Participants also explored the advantages and disadvantages of implementing autonomous systems connected to existing IXPs to provide an alternative content source for medium and small ISP, in regions with lower economic capacity, which are less attractive to large ISPs.

One suggestion was to include a new perspective – the model of a big central server sending much data to networks, which is seemingly a good model. But it implies architectural changes to the network, given that bringing data closer to users is also critical. This brings into question the need for a better comprehension of the impact of such changes for net neutrality discussions and the controversies around regulating over the top (OTT) players.

Jane Coffin (Internet Society US) presented the challenge in attracting CDNs to regions with lower economic capacity, which are less attractive to large ISPs. She also considered that the key aspect of any IXP is the community – it is people who interact and help to develop and champion IXPs. Content cached locally is one of the critical aspects for the development of these communities.

Bastiaan Goslings (Amsterdam Internet Exchange) shared his experiences on implementing CDNs with popular content in the context of the Caribbean IXP project. The community in the Caribbean felt that an IXP could add value to the network. He said it was a challenge to get the local IXPs to work since potential participants were already getting content from Miami. However, they decided to implement a CDN and in 2010, Google and other content providers cached their content on the CDN's servers. Challenges he highlighted: creating trust, having a solid and transparent financial model, and recognising the entire ecosystem and giving everyone sufficient attention. Content caching plays an important role in setting a common interest base in the community.

Alejandro Guzman (Google) explained that Google's CDN initiatives are concerned with the users behind the ISPs. His challenge is to get connected to the ISPs and ensure that the content is being delivered in good quality to users. He said that in a place where the market is highly concentrated in the hands of one or two big ISPs, connecting them through an IXP is not the right solution. Google implements servers in the ISP's network to store content. IXPs can also be created just for some of the ISPs in the country and they block other players. In this case, he explained Google prefers to help everybody else. And when the IXP is not a cost-effective solution, he said Google tries to help to develop the environment. In Brazil, where there are some 3,000 ISPs, IXPs play a very important role even if some are not cost effective.

Martin Levy (Cloudflare) noted that content in a CDN is always somebody else's content, and it should be distributing around the globe is to make the process more efficient, faster and safer. However, he expressed concern about the technical requirements for content flow, which demands quite a bit of engineering. He added that some local providers are not peering among themselves, and that more peering could be achieved. Cloudflare's mission is to deliver the content as close as possible to the eyeballs of Internet users and in most cases, Internet exchanges are the best model for doing this, he said.

Antonio Moreiras (NIC.br) focused on the Open CDN initiative that is being developed by NIC.br/CGI.br in Brazil. NIC.br is creating an alternative system to support hosting services near a group of medium and small ISPs. The idea is to create a stimulus to participants of a local IXP to share the costs of connecting and hosting a CDN, which is open for sharing content among ISPs. NIC.br is trying to convince the CDNs and content providers to participate and share costs. He mentioned an example of local IXP built by an association of ISPs, called ANID. He presented a graph showing how the traffic has grown and reached more than 15 gigabits per second.

Moreiras also presented a model for the internet development that has first tier, which is the core with the ISPs connected in it. Around that, there is the doughnut internet concept where the ISPs start working with each other with the help of IXPs. He proposed that it's important to ask CDNs to follow the doughnut Internet model. The CDNs must be closer to the ISPs and to the end users, because CDNs are responsible for approximately 50% to 80% of the traffic that ISP have to bring to the users.

Best Practice Forum – Contributing to the success and continued development of Internet exchange points (IXPs)

This was an IGF Best Practice Forum (BPF) that covered:

- The functions of IXPs and their potential contribution to the inclusive and sustainable growth of the local Internet and local Internet community
- Best practices for establishing, managing and developing an IXP
- Information on existing initiatives and resources.

The audience heard about the role and benefits of IXPs as interconnection points between independent networks with the purpose of facilitating the exchange of Internet traffic. Panelists gave short introductions on their IXP and/or the IXP environment in their country – these included the Bangladesh Internet Exchange (BDIX), IXP Ecuador, the Bangkok Neutral Internet Exchange (BKNIX), the Brazil Internet Exchange (br.IX) and the IXP environment in Canada.

Best practice points included:

- The importance of local support and community building to create a trusted environment for an IXP to flourish
- The importance of a business mindset – how IXPs can deal with growth and cope with volunteer and donor fatigue
- The importance of visibility, business development, branding and market knowledge
- Financial and technical sustainability.

There is a continuing need to build trust, local support and understanding of the role of an IXP, to enable it to flourish and contribute to inclusive and sustainable growth of the local Internet and local Internet community. A business mindset and developing a business plan and strategy is more than just commercialising an IXP.

There's a need for further outreach, awareness raising and a better understanding of the function of IXPs among policy and decision makers to create support and avoid measures that can hinder their development.

Workshop – Small island developing states (SIDS) roundtable: Death, disaster and the Internet

This session took a roundtable format. Key issues raised were:

- Small island developing states (SIDS) are highly vulnerable to natural disasters that can cause significant loss of life and damage to property and infrastructure
- Evidence from natural and man-made disasters in the Caribbean and Pacific Islands show how the Internet and ICTs can be used to predict, react to, or recover from the effects
- Climate change and emerging environmental challenges have affected and will continue to affect SIDS in the years ahead
- The UN's Sustainable Development Goals (SDGs) are important to SIDS as are the ways Internet technologies can be deployed to meet the goals.

Participants heard that broadening the traditional definition of ICT beyond the Internet and traditional telephony is important in dealing with natural disasters given the significant role that radio and related communications can play in getting information out to communities

before, during and immediately after disasters. Examples were given from the 2010 Haiti earthquake, hurricanes/cyclones in Fiji and Vanuatu, the 1995 Kobe earthquake and the 2011 Japan tsunami. In Haiti, it was clear that the majority of the mobile infrastructure was damaged and radio communications became crucial. In Tonga, early warning systems are critical to the predictive ability of the state apparatus; while SMS has been used, it takes as long as 20 minutes for messages to be distributed throughout the country. So, like other territories, Tonga is also turning to radio-based communications to ensure that messages get out, potentially using FM radio.

Another important and little discussed issue is the power grid, which almost always fails during disasters, and the resulting requirement for diesel power.

The Internet was mentioned as being used for prediction and information dissemination (e.g. in tsunami warning systems) as well as recovery through use of mobile money and crowdsourcing.

The issue of accessibility and the lack of disability disaggregated data are also significant concerns. Recommendations were made to make the information on warnings available for people with disabilities. A good example is the Pacific Disability Forum, which worked with five Pacific Islands to set up a disability inclusive disaster response service. It was suggested that the Caribbean Islands and other SIDS could explore ways to replicate the Pacific Islands experience.

Another project mentioned was the IEEE Smart Villages initiative, which was important in Haiti where a solar trailer system was set up giving people the power to charge their cellphones. In addition, given that Haiti was not properly mapped, the Open Street Maps initiative was critical in helping rescue workers find people after the earthquake.

In discussing the role of climate change, references were made to the now mothballed IGF Dynamic Coalition on Climate Change, and the recommendations it had made in a multistakeholder approach. To this end, participants were clear that there are still challenges related to the effective deployment of the Internet technologies on small islands, leaving aside having them deployed and customised for disaster preparedness and disaster prevention. It is therefore critical to accelerate efforts to deploy ICTs. The management and mitigation of climate change and disaster is not only an issue of making use of technologies, but also a question of incorporating institutional and cultural practices to develop more effective mechanisms.

There was a strong recommendation to establish a Dynamic Coalition on SIDS within the IGF framework to facilitate collaboration and sharing of information.

A representative from DiploFoundation recommended that Caribbean and Pacific Islands participate in an initiative the foundation has been running in the Pacific, with an expansion currently underway in the Caribbean, called CD Multilateral Diplomacy ('CD Multi'). This initiative helps SIDS and African countries to strengthen their capacity and use e-tools to overcome geographical, financial, and human resource limitations. There are travel funds available for the SIDS to participate in policymaking sessions in Geneva at the UN.

Workshop – NetGov, please meet cybernorms. Opening the debate

The workshop explored to what extent do the UN Group of Governmental Experts (GGE) actually looks to other stakeholders for input or advice. It also asked if UN GGE recommendations can have consequences at the Internet operational level. Participants discussed the extent to which the technical community can support implementation of the

GGE agreed norms and whether the IGF can serve as a platform to facilitate these engagements.

There are different venues in which 'cybernorms' are being discussed and propagated. Most of these discussions are dominated by state actors since they are held in a geopolitical or international security context. The UN GGE, for example, mainly focuses on international norms that aim to regulate state behaviour with regard to cyber-operations.

Marilia Maciel (DiploFoundation) said that in national security discussions, states protect their sovereignty. Maybe it's time for the security side to rethink where they place the individual in security discussions, she said.

Alejandro Pisanty (Internet Society) said the Internet has originally been based on trust by design and it has been able to survive in an environment where trust is not an assumption any more. A multistakeholder approach has worked well in solving Internet problems, but form has followed function, so it varies by context. The Internet governance community tends to see cybernorms as too high above their layers of the Internet. However, cybernorms may provide useful specifications for the technical systems (such as the definition of an attack, whom to report one to, etc.) and may help keep some large-scale misconducts accountable.

Duncan Hollis (Temple University School of Law) added that we might envision a more multistakeholder approach to the implementation of norms, monitoring whether states follow through what they agree to and find ways to build capacity, particularly at the technical level. Situational awareness is needed for both the IGF and UN GGE regarding their respective action plans.

Henry Ro□igas (NATO Cooperative Cyber Defence Centre of Excellence) said there is incomplete but somewhat overlapping focus between the UN GGE and IGF. It is important to build situational awareness: the Internet community should be aware of the knock-on effects of inter-state conflicts and states should be able to follow-up on those norms that affect non-state actors.

Michael Walma (expert at the UN GGE from Canada), said the GGE should deal only with issues of peace and security, rather than with broader issues like cybercrime, cyberterrorism, or Internet governance. For the latter, there are multistakeholder processes in place to discuss these topics.

Irene Poetranto (University of Toronto) said attention needs to be placed not only on developing good norms, but also in researching threatening and undemocratic norms such as Internet censorship practices, shutdowns and how they spread from one country to another.

Izumi Okutani (JPNIC) noted that network operators have norms as well. These are voluntary, publicly available, and open for comments from anyone interested. They can take the form of open collaboration, and development of current best practices of bottom-up policy development processes.

Paul Wilson (APNIC) said the difference between a secure Internet and an insecure Internet has more to do with the skills and capacities of the people who are running, building, and maintaining it, than almost anything else. For the norms that are being talked about to be operational, there needs to be consideration of the effects and the side-effects that they may have in the day-to-day operations of the networks.

Juan Fernández (Ministry of Informatics and Communication, Cuba), said that there are linkages between cybernorms and Internet governance discussions, because they relate to the

Internet and they talk about the same space. We should try to find the common ground where these relationships could occur.

Mathew Shears (Center for Democracy and Technology) asked to what extent the GGE looks to the technical community for responses, and vice versa.

Anja Kovacs (Internet Democracy Project, India) said cybersecurity and Internet governance discussions have not actually evolved far apart. Research by her project shows that in India, cybersecurity has been the main driver of much of the government stances taken in the Internet governance arena. Moreover, while related discussions play out in several venues at the global level, disagreements spill over in many more venues, strongly affecting the work of civil society actors who are, however, excluded from participating in venues where these discussions are actually shaped.

The session concluded that IGF stakeholders might be able to help nations operationalise some of the norms being developed at the UN GGE, such as not targeting critical infrastructure or not having computer emergency response teams (CERTs) be the target of malicious activities. The speakers agreed that there could be mutually constructive ways for the GGE to be more open and transparent and for Internet governance stakeholders to be more aware and involved in these discussions.

Among suggestions for the way forward:

- The UN GGE will do well in being informed about the perspectives from the Internet governance side, and what uncertainties it brings to state level decisions
- A paper would be useful on what the gaps are, how to bridge them or how to structure collaboration between cybernorms and Internet governance discussions; some participants announced their intention to work together on a gap analysis of the perspectives from the two fields that may lead to a work programme
- To have a session at IGF12 on the as yet unwritten 2017 UN GGE report. The session could be similar to the WSIS+10 Review session at the IGF10, with formal input into official government processes where everybody can contribute, keeping in mind that it will still be the governments who ultimately decide
- Promote convergence of global experts at the Global Conference on Cyberspace (GCCS)
- States will have norms that will guide their behaviour, but they don't have to be state-centric in operationalising them entirely. The UN GGE should think how to involve the technical community, to think about what role the IGF and the IGF community do play in operationalising these norms.

Best Practice Forum on IPv6: Understanding the commercial and economic incentives behind a successful IPv6 deployment

IP addresses are unique identifiers on the Internet but the current stock of IPv4 addresses is running out and therefore the new version – IPv6 – is being deployed. Several major global players are commercially deploying IPv4 as well as players in different regions. But the map showing IPv6 deployment rates shows that there are big differences between countries, and that these differences cannot always be explained by traditional economic variables (such as GDP or the state of development of the Internet in a country). Case studies collected by the BPF show that long-term business continuity, cost savings by deploying IPv6, and image building are the main drivers for businesses that have deployed IPv6 on their networks.

Some observations:

- Apple announced that it requires that applications support IPv6 and are tested in an IPv6 environment before they can be added or updated in the Apple app store. This will result in a jump in IPv6 traffic. One of the reasons for this requirement was the decision by a major mobile operator in the US to eventually cut off all IPv4 underlying connectivity on Apple iPhones
- In the Asia-Pacific region the Internet is growing at a phenomenal rate. This creates opportunities to enable IPv6 in new networks and infrastructure, and for new equipment and services that are being developed
- Feeling fine with doing nothing because an organisation or business still has a large resource of IPv4 addresses is trusting a false sense of security
- IPv4 has become the legacy protocol and leaving infrastructure on IPv4 will incur high costs in the future – eventually it will be necessary to use IPv4 translators which impact user experience
- The deployment of IPv6 is completely situational. One size fits nobody and the cost of IPv6 depends on different factors, such as the characteristics of the infrastructure and dependency on the Internet
- Not deploying IPv6 in new infrastructure and services is a wasted opportunity and ultimately a waste of money. Every purchase decision by an individual, government, company or organisation should ask for IPv6, even if their own network is not yet ready. This will save on upgrade and replacements costs in the future
- Large companies that have taken the decision to deploy IPv6 must have a good reason and business case to do so; there are some good examples of cost analysis from various perspectives of different types of organizations
- Most users are not aware of what IP version they are using, but they might see their user experience degrading if their provider does not move to IPv6 (as a study showed). Where IPv4 connectivity goes through a carrier grade network address translator (CGN) it loses end-to-end connectivity, and applications degrade and become difficult to use, such as gaming, video streaming and downloading large files.

Governments can play an important role by raising awareness and leading by example. Internet service providers (ISPs) and large networks that took the decision to deploy IPv6 have been the main drivers behind its uptake. Internet end users are in general not aware – and not supposed to be aware – of what protocol they are using. However, they might help to stimulate demand by asking their providers whether and when they will deploy IPv6.

Participants at the session made a number of recommendations.

For policymakers:

- Contact decision makers in industry and stimulate them to deploy IPv6 (not regulate)
- Raise awareness on which products support IPv6 and encourage purchasing of IPv6 supported equipment
- Consider training for smaller businesses and those in developing countries; this could be done by public-private collaboration.

For business decision makers:

- Vendors: have your products support IPv6.

For service providers:

- Deploying now means saving on (higher) investments in the future; choose IPv6 supported products when updating/renewing the network

- Training your staff is not hard if they already know how to run an IPv4 network. Make use of available external training courses
- When deploying IPv6 commercially, turn it on by default (not opt-in). Several companies have already done this without major problems
- Problems with IPv6 are often due to simple misconfiguration. Having properly trained staff will help to avoid them.

Workshop – Building trust and confidence: Implement Internet standards

This workshop identified good practices in speeding up implementation of internet standards, through expanding existing practices, and exploring new solutions and ways of cooperation to encourage users and providers to use modern standards, as a collaborative exercise by businesses, the technical community, civil society, academia and governments.

This workshop was the kick-off of the Internet Infrastructure Initiative that was launched under the aegis of the Global Forum on Cyber Expertise (GFCE). The ambition of the GFCE is to become the global platform where public and private companies exchange expertise and best practices on cyber-capacity building. The GFCE provides countries and organisations with a platform to effectively cooperate on a global level. Members and partners develop practical initiatives to take advantage of opportunities in cyberspace and to overcome evolving challenges in the field.

The aim of this initiative is also to help build a robust, transparent and resilient Internet infrastructure following the experience in the Netherlands in testing and monitoring compliance with open Internet standards.

The background is that digital technologies have spread rapidly across the world, acknowledges the World Bank report, Digital Dividends. In many instances, digital technologies have boosted economic growth, expanded job opportunities and improved service delivery. Yet their aggregate impact has fallen short and benefits are unevenly distributed in the world.

Inclusive and sustainable growth can only be accomplished within a trusted and robust Internet ecosystem. The Internet infrastructure is its foundation, operating on a set of core and protocols, including the TCP/IP protocol suite, the Domain Name System (DNS) and routing protocols. These layers could be regarded as global public goods.

As such, the Internet only works properly if its underlying values – openness, universality, interoperability and accessibility – are guaranteed and if it facilitates the main objectives of data security: confidentiality, integrity and availability. For these purposes, many open standards were developed by the technical community, such as IPv6, DNSSEC, TLS, DKIM, SPF and DMARC.

It is vital that users can rely on the fundamental Internet protocols and standards functioning properly. The aim is to

- Recognise good practices on effective implementation of Internet standards and related protocols with strong agenda- and policy-setting power
- Propose key activities for the Internet Infrastructure Initiative in order to act as a complementary nucleus of expertise and capacity-building support
- Identify stakeholders and partners for cooperation.

The target audience are those stakeholders with (political) agenda-setting, regulatory and policy-setting authority.

The availability of open Internet standards is not the problem. The IETF, ISO and other standards organisations have created a vast and comprehensive compendium of practices based on rough consensus within the technical Internet community. The problem rests with the implementation process. Some key challenges are:

- Different implementation approaches per country depending on infrastructure maturity
- Effective prioritisation of standards: which are essential and which are less so?
- The role of government as an incentive provider and norm-setter
- Maturity of public-private cooperation and of the multistakeholder ecosystem
- Achieving synergy and complementarity between various global and regional initiatives.

So given we have a set of modern standards for scalable and secure Internet use, how do we provide the right preconditions and incentives for organisations, companies and others to adopt these standard, even in cases where a tangible return on investment is not evident?

Key questions addressed by participants in the workshop were:

- What and where are good practices in implementing open internet standards?
- What can be good preconditions for effective implementation by organisations, public agencies, companies etc.?
- In which geographical areas is there a distinct need to address/prioritise the implementing of open standards?
- With which stakeholder groups is there a distinct need to address/prioritise the implementing of open standards?
- Which other initiatives/activities regarding implementing of internet standards are noteworthy and should be considered?

GENDER AND YOUTH ISSUES

There was a raft of issues concerning women, young people and children at IGF11, and they divide logically into these three groups.

Gender and women

Gender is a term mostly used to mean women and the importance of involving them in all aspects of Internet governance. Among the most powerful contributions to this theme came in the major theme for IGF11, namely the relationship with the Sustainable Development Goals (SDGs), of which several goals especially impact women, including health and wellbeing, education, and of course the goal on gender itself (goal 5: Achieve gender equality and empower all women and girls).

In the main session, 'Assessing the role of Internet governance in the SDGs', it was noted that not only is the lack of access to ICTs and the Internet still a huge concern, but also that the global Internet user gender gap is even increasing. "We believe that connecting people to the global network and ensuring they have the skills and the freedom to use connectivity productively is our highest mission," noted Daniel Sepulveda, then deputy assistant secretary, US State Department, who added: "We also cannot afford to deny that the challenge is disproportionately real for women and disenfranchised communities."

It was notable that in a contribution by Doreen Bogdan, chief of the ITU's strategic planning and membership department, examples where multistakeholder action on technology have been successful all featured women. The ITU together with UN Women has launched a

multistakeholder initiative called Equals, which is a global partnership for bridging the digital gender divide, and presented in an open forum at IGF11, in line with SDG 5.

A complementary main session on sustainable development and inclusion featured a sub-session on the inclusion of women and youth. Points about women included:

- Digitising government services helps bridge gaps
- Women can be empowered with training in IT
- Publicising pioneering female Internet figures such as China's Qihang Hu (and leading by example) is important, as a speaker from the Internet Society said in highlighting the senior role of women in his organisation.

Best Practice Forum (BPF) on gender and access

It was noted that while a lot of work had been done in the field of gender and access, the IGF's multistakeholder advisory group (MAG) agreed that the BPF could contribute by aggregating and mapping the input and investigating more national and regional initiatives.

It was explained that the BPF's work was also conducted in the context of the need to support women and girls' equality goals, and the promotion of the empowerment of women and girls outlined in the UN 2030 Agenda for the Sustainable Development, specifically goal 9c about access and goal 5 about the need for gender equality and the need to empower women.

In this context, it was stressed that not only access is important, but also what is actually meant by access. As Jac SM Kee, who leads the women's rights program at the Association for Progressive Communications pointed out, if you don't see the value of accessing the Internet then even if you gave out free laptops you are not going to take it on.

So the role of women as not only users but also active participants in meaningful access was stressed – and that they must become more invested in shaping the Internet they want in the future.

Factors such as the age of users and the region are important to understand, including the different barriers that apply in diverse contexts. The BPF identified a number of such barriers.

Culture and norms

The BPF's findings indicate that culture and norms are a foundational concern for women's access, such as women having multiple responsibilities and limited time, and their literacy skills and digital capacities. Claire Sibthorpe, who leads the Connected Women programme at the GSMA (UK), noted that mobile access is the primary tool for Internet access in developing countries. While many barriers for women and men are the same, women are disproportionately affected by them – education and income, for instance. In India, research shows that women are much less likely to be able or allowed to make decisions about handsets and credit, which could mean they are not getting a cost-effective device with Internet access.

In areas where users share access, women have less opportunity to develop skills needed to benefit from technology, and therefore have lower digital literacy skills and less confidence. Where access is shared, men are given more time with devices than women.

Threats and safety

Reference was made to the BPF's work on online abuse and gender-based violence conducted in 2015.

Angie Contreras from the Youth Observatory, Mexico, described a declaration submitted by participants from the Youth Observatory, and explained that the Internet as a space and a tool for confidence and freedom of expression for women is threatened by fears of online abuse and violence. She noted that research shows girls and women are subjected to substantial surveillance both at home and as 'social surveillance'.

Mary Uduma from the Nigeria IGF and Nigeria Internet Registration Association, said in an area of Nigeria where a sub-regional IGF was held, women are fearful of the Internet due to the presence of Boko Haram and the fear that the Internet is a tool for radicalising children.

Anja Kovacs from the Internet Democracy Project, India, described bans by the Punjarat (local councils in India), explaining that the basis for these bans is often that women and girls 'need to be protected' from online abuse and therefore should not have access to the Internet. She stressed the need to empower women, rather than protect them.

A roadmap of recommendations drawn from the BPF's work in 2015 was shared with the participants as a potential way for policymakers and other stakeholders to address the challenge of online abuse and gender-based violence.

Relevant policies

Doreen Bogdan-Martin of the ITU stressed the importance of evidence-based action and the need for working with various stakeholders in addressing policy gaps. She described the development of the ITU and UN Women's Equals campaign, including the way in which existing initiatives have been mapped, and invited participants [to a session](#) where the ways in which Equals will do its work were discussed, and how the BPF can collaborate with the initiative.

Relevant infrastructure

It was noted that while affordability and cost (of devices and data plans) and the availability of infrastructure (including electricity) were discussed as separate barriers in the BPF's report, they were combined for the purpose of the session.

Alison Gillwald, from Research ICT Africa, lamented that there appears to be little systemic improvements required to overcome the problem. She noted that there is a lack data and urged that a governance framework is needed that obliges the collection and use of public data to reach a better understanding of digital divides, and noted that only demand-side data can enable a true measurement of differences in access between men and women. She said it is vital that the expertise of different stakeholders be combined to reach better solutions, as this is not only a civil society story, and governments and academia must also be held accountable.

Nanjira Sambuli from the Web Foundation (Kenya) focused on affordability as a barrier, and noted that the price of devices and broadband represents too high a proportion of income of many. She noted that the Alliance for Affordable Internet has proposed a new and more ambitious affordability target of 1 for 2, namely that 1 GB of data should not cost more than 2% of income. She noted that the existing measure used by many organisations, namely 500 MB of data, is too low to be useful to anyone.

Digital literacy and other capacities

Ritu Strivastava from the Digital Empowerment Foundation, India, noted that technology itself often becomes a barrier to women, as women do not feel able to benefit from and use many technologies and even feel pushed aside. She noted that her experiences in India in the

rollout of community networks have indicated that women want to engage in all aspects of building them. Yet women suffer from a lack of understanding of technology to an extent not experienced by many men.

Many women only have access to secondhand mobile phones and men tend to make decisions for women. Where women have no private access, they often struggle to access public facilities or Wi-Fi points because trainers and facilitators are male. Where female trainers are involved, she has found that women are more likely to make use of a public access facility.

Peter Bloom, from Rizoma´tica, Brazil, shared his experience of working in rural areas to establish community networks, asking how such networks can be established in ways that will also be meaningful to women. He said proponents of community networks are increasingly talking about how such networks can become transformative.

Dynamic Coalition on Gender and Internet Governance

This session from one of the Dynamic Coalitions reported that while the number of women participants, moderators and presenters is increasing at IGF (about 35% at IGF11), gender is still not mentioned enough as a key issue in many IGF sessions.

There was also a presentation on the need for the IGF to have a sexual harassment policy as part of its code of conduct that applies to all stakeholders, online and offline. Discussion on a draft policy focused on three questions:

- Should anonymous reporting of a case of sexual harassment be part of the policy?
- Should third-party reporting be part of the policy?
- What non-punitive measures can be used to deal with sexual harassment?

It was suggested that any sexual harassment policy for the IGF has provision for anonymous reporting. No one was in favour of accepting third-party reports of sexual harassment without the consent of the individual. And there should be both non-punitive and punitive measures for dealing with sexual harassment at the IGF.

Gender diversity was also raised as an issue for the IGF, as it has tended to focus on defining gender as only men and women. How to include people who define themselves in others ways? It was suggested that a category called 'other' be in the IGF registration form to measure diversity of genders beyond men and women.

Workshop: Solutions for countering online abuse against women

This workshop had subgroups that addressed questions including:

1. What role does the Internet play in your journalism/activism/personal or professional life?
2. What kind of speech usually results in abuse and harassment?
3. What kind of abuse do you and your allies face?
4. How does hate speech and abuse affect your usage of the digital space?
5. How do you currently respond to such speech?
6. What would make you feel safer and more empowered to use digital spaces?

Apart from laws for cyber-bullying and mechanisms for platforms such as Facebook, there needs to be community solidarity among women in general (especially activists). Having a list of collectives and other organisations should help. Another option could be naming and

shaming repeat offenders. The longer-term solution is educating and raising awareness for decision makers and developers of technology.

Revenge porn was discussed – and to make social media safer for everyone it was suggested that platforms should raise the cost of posting and sharing personal images without consent. A potential solution is facial recognition for social media platforms and automatic tagging of individuals.

The importance of a caring online community to support women rights activists was stressed. A potential option is to tag such communities for counter speech whenever they are being attacked.

Open Forum: UN Women

The key issue raised during this forum was how to approach the challenges related to the gender digital divide. There was a presentation on Equals, the global partnership to end the gender digital divide. This presentation covered the 3 areas of action of this multistakeholder partnership: access, skills and leadership.

Panel members shared private sector, government, civil society and UN perspectives and work on the topic. Doreen Bogdan (ITU) introduced the ITU UN Women partnership; Paul Mitchell from Microsoft referred to its work under the Pink Cloud Initiative, and the Youth SPARK initiative to promote programming skills for women. Yolanda Martinez introduced the work that the government of Mexico is doing under the Digital Government Unit of the Ministry of Public Administration. Civil society presentations from the Alliance of Affordable Internet and the Alliance for Progressive Communications addressed access barriers, cultural norms, safety and risks.

Workshop: TechWomen: Driving ICT, innovation and collaboration in Central Asia and South Asia (CASA)

The workshop highlighted that there is low Internet use by women in the region, and there is diversity of languages and ethnicities and a need for local content and local technologies. A common issue faced by women across the region is a lack programmes to help with transfer of technologies and experience and knowledge sharing.

Reports from countries included:

Sahar Habib and Naumana Suleman (Pakistan) said women in Pakistan face restrictions on access to the Internet due to cultural and societal factors, particularly in rural areas. There is a need for advocacy to change attitudes. There are also online crimes against women. A problem is that the solutions to online crime can be used to curb expression. There are also problems with infrastructure.

Omar Mansoor Ansari and Shabana Mansoory (Afghanistan) said major problems concerning the Internet are access and cost, but it is estimated that 80% of women have access to mobile phone.

Latha Redd (India) said Indian women share the problems of women throughout Central Asia and South Asia. There are two ministries with roles in the Internet and many organisations, and efforts are underway to reduce overlaps. India has the second largest number of connected women but many are still unconnected; there are problems with literacy, the use of English, and online crime. Civil society has role in identifying issues and making views known.

Solutions include:

Sylvia Cadena (APNIC Foundation, Asia Pacific) – APNIC provides capacity building for engineers to set up networks around the region and has a fellowship programme that encourages women engineers. There are capacity building resources in the region available free of charge, but the diversity of local languages makes translation complicated.

Joseph Gattuso (US Department of Commerce) described the Commercial Law Development Programme (CLDP), which provides training, workshops, and technical assistance that foster the investment climate in countries such as Afghanistan and Pakistan. Topics include connectivity, cybersecurity, social media and cybercrime, and how the law affects women. CLDP sponsors internships and fellowships on a limited scale.

Sheen Handoo (Facebook) said the company has a programme for women entrepreneurs to help them build their businesses online. More than 1,800 women entrepreneurs in India have been helped, and the project has been expanded to Pakistan.

Karen McCabe (IEEE Women in Engineering, WIE) said WIE is one of the largest international professional programmes dedicated to promoting women engineers and scientists and inspiring girls around the world to follow a career in engineering. Over 600 WIE groups including in South and Central Asia provide girls and women with mentors and experts, and training in technical, leadership, project management and entrepreneurship skills.

Lorrayne Porciuncula (OECD) said the OECD created the Gender Portal in 2015 through the OECD Gender Initiative. The portal compiles good practices, analytical tools and data on gender across all OECD policy work. Examples include GENDERNET and Wikigender. On science and technology, OECD has statistics and model surveys that can help countries to assess the gaps on ICT access and usage by gender and on the differences in the availability of male and female ICT specialists. For the OECD, it is imperative to compile data to develop evidence-based policies and to monitor their implementation.

Potential next steps for the region include:

- Developing a TechWomen CASA regional network with clear expectations from potential country members. Do a mapping exercise to identify which organisations are led by women and which are implementing ICT research and capacity building for women
- As part of the mapping exercise, identify existing capacity building planks in the ICT sector. This could include: telecoms infrastructure, cybersecurity and online safety, content and applications; decision-making processes; and engaging stakeholders.
- Develop a 'hive' that would serve as a knowledge exchange for building capacity of women through ICTs and in the ICT sector. This would include links to resources identified by the speakers, such as GENDERNET, social media, free and open source materials, such as code.facebook.com, scholarships and fellowships offered by organisations such as APNIC, CDLP, IEEE, and other content that could be localised and translated into local languages.

Young people

A major new strand at IGF11 was the debate about how to include young people more in the Internet governance process. The final main session, 'Shaping the future of Internet governance', was designed to provoke a conversation between different generations about the

state of the Internet ecosystem, and provoked much discussion about empowering and involving young people in the IGF and wider Internet and ICT policy and debate.

For the first time, the NRIs organised a main session where IGF initiatives from 41 countries and regions, including three Youth IGFs, were represented.

It was noted by young people that there can be a lack of information and in some sessions young people were not called to speak. There can be a view that young people are newcomers and lacking in their capacity to contribute. But luminaries such as Vint Cerf stressed the importance that the disruption of having new ideas and views can have at the IGF and other forums. The paradox is that young people are at the forefront of using the Internet in new ways – but can be marginalised in framing its development.

To help young people become more engaged, IGF11 introduced some new session types, including 'lightning' and 'unconference' sessions, as experiments. These informal formats were popular. Meanwhile over 150 participants attended an open forum by the European Union Youth IGF delegation.

Concerning the SDGs, a need emphasised several times is that making sustainable change in poverty, health, education and other goals will need jobs for young people, particularly in developing countries, so they can provide for families and communities.

Workshop – Youth in Internet governance: Capacity building vs policy discussion

This workshop raised two key issues:

- Best practice in engaging youth in Internet governance and involving them in policy discussions
- Ways to enhance cooperation among different youth initiatives.

Martin Fischer (Network of European Digital Youth) said there are six principles of youth outreach work: co-management, multistakeholderism, youth involvement in agenda setting for Internet governance events, cost-free participation for youth, continuous engagement and informed representation.

Joachim Kind (German Safer Internet Centre) talked about capacity building among children and youth in Germany, and agreed that it is crucial to giving youth a platform to share views and participate in shaping policy'.

Jianne Soriano (NetMission.Asia) mentioned the youth initiatives such as Youth IGF, HKYIGF and NetY programs in the Asia Pacific region. While young people are not directly engaged in the policy discussion, creating a platform for them to speak and organise events is a good way to get started.

Haoran Huang (Asia Pacific Internet Governance Academy) shared his experience as a youth fellow at ICANN and IGF, and expressed gratitude to organisations that facilitate youth to attend the meetings, which is a good starting point to encourage young people to participate in Internet governance.

Olga Cavalli (ICANN Governmental Advisory Committee and the South School on Internet Governance) noted that there is a gap to be filled for youth and women participation in

Internet governance, and stated that it is important to not isolate them but to mix and exchange views with other stakeholders to engage in policy work.

Rodrigo De La Parra (ICANN) supported youth participation in Internet governance and added there are fellowship and regional programmes, such as NextGen@ICANN and the Asia Pacific Internet Governance Academy where young people can get involved in ICANN discussions.

It was acknowledged that young people are not a homogenous group and have diverse backgrounds and interests, so it is important to not neglect any minority voices, and that youth is not isolated as a stakeholder group but be part of other groups.

Workshop: Hands-on youth-driven Internet initiatives

This workshop focused on the role of young people in promoting Internet governance discussions, highlighting various initiatives and the principles that youth-driven projects should have and the challenges they face.

Successful initiatives are open and sharable, but funding was seen as a main challenge, and options such as crowd funding were suggested. Funding must be transparent, it was said.

A Best Practice Forum has been proposed for development in 2017.

Projects

The Internet Society presented the Youth@IGF programme – this was launched with the Brazil Internet Steering Committee in 2015 and comprises an online training programme in Internet governance and, with partners, up to 100 young people were awarded travel fellowships to IGF11.

Agustina Callegari (Ministry of Modernization of Argentina) presented the NextGen programme run by ICANN. It is aimed at young people living in the region where ICANN meetings are held and is an opportunity to engage in the ICANN community and make a public presentation about a subject or a project. Mark Datysgeld (Saⵏo Paulo State University), who received an ICANN NextGen scholarship, presented the Governance Primer project, a course that seeks to address the knowledge gap and lower barriers of entry for non-engineers or social scientists who want to participate in the IETF, IGF, ICANN, etc.

Lucas Moura (Axur) described a workshop called Peregrino that teaches children about cybersecurity by explaining to them how the Internet works. The workshop consists of playing games and creating a network. He stressed the importance of openness and resilience of youth-driven projects and suggested different types of funding, including crowd funding.

Ivan Martinez ((Wikimedia Me´xico) talked about the Wikimedia movement around the world and its volunteers, who are on average 26 years old, and 60% women. He said a key is to approach schools and run more projects on content creation.

Sara Fratti (Guatemala ICC) presented the Youth Observatory, a non-profit organisation founded in September 2015 that joined the Internet Society as a special interest group in 2016. It is mostly run by young people and puts emphasis on training youth in Internet governance issues to increase their participation. The organisation wrote the Youth Declaration on Internet Governance and organised the first Youth LACIGF.

June Tessy Okal (Nairobi Legal Hackers) talked about the project Youth.com, a one day conference for young people around 17 to 25 years old that seeks to train them on Internet Governance related issues. It was held in Kenya and other countries in Africa. It had funding from stakeholders such as the Kenyan ICT regulator and the Kenyan CCTLD. She stressed how African youth is starting to have youth IGFs and trying to partner with ICANN and the Internet Socitey to promote remote participation in major events, such as IGF.

Children

Children's issues at the IGF embraced two main inter-linked topics – child protection online, and their digital rights. In keeping with the major theme on SDGs, it was mentioned that children are a vulnerable group, and their right to access information, and to privacy and safety online need to be enforced in order to achieve the goals. For the first time at the IGF, [UNICEF organised a session on children's rights research](#). It discussed the results of the first year of research of the Global Kids Online initiative, and a call was made for stakeholders to seek the opinions of children. The younger generation should not be excluded from debates on children's safety and their rights online.

It was also noted at the IGF that there are still some 60 million children of primary school age not attending school and 26 million teachers are needed around the world – ICTs can help fill that gap. It was mentioned too that women's inclusion in the digital world is critical to children's digital rights and access.

[Workshop: Children's rights to privacy, safety and freedom of expression](#)

As of 2015 one in three Internet users worldwide was aged under 18, and in many developing countries it was one in two. The UN Charter on the Rights of the Child (UNCRC) addresses in Articles 12 to 17 and 19 the rights of children to freedom of expression, access to information, and privacy, and their right to be safeguarded and protected from violence. When the UNCRC was elaborated, media did play a role in children's life but none that is comparable to the Internet of today. Internet governance must take into account this impact and address the assertion of children's rights to privacy, safety and freedom of expression.

Achievement of the IGF goal of connecting the next billion Internet users will obviously mean a lot more young people online, considering the demographic structure of the population in countries not yet fully connected. To benefit from the Internet's potential to strengthen democracy and social participation children need both physical access and digital literacy education to gain the rights they are given by the UNCRC.

Discussion at the session revolved around the double-edged nation of the Internet – children are able to exercise the rights dedicated to them by the UNCRC, but at the same time use of the Internet also puts them at risk of infringement of their rights, such as their right to privacy as laid down in Article 16.

With reference to the European General Data Protection Regulation (GDPR), the threshold for using social media without prior consent of parents was mentioned. So far, the age as defined by the US Children's Online Privacy Protection rule (COPPA) is 13, but the GDPR sets 16 with national governments being allowed to set a different age threshold between 13 and 16. Young participants to the workshop declared that many children – even under the age of 10 – are telling lies about their age to get access and some might not be aware of the risks. It was explained that Facebook and other social media platforms have safety measures in place for children under 18, but these would only work if the children have set their profile with the correct age. Age thresholds were seen by participants as not adequate to protect children.

The main purpose of the age threshold in COPPA and GDPR is to prevent the exploitation of children's data by companies. The debate addressed this issue: young participants asked what problem could arise from children giving their data away and why companies could not just provide their services without gathering data from their users. Then it was explained that younger children would not be able to comprehend how, when, why their data is collected and that not gathering data would affect the companies' business model.

When user data from different types of platforms and services including searches for content are analysed this results in an algorithmic identity, a so-called 'shadow us' that constitutes currency on the Internet and is of enormous value for companies. The Internet of Things (IoT) and even toys for small children – as discussed in the session of the Dynamic Coalition on Child Online Safety – were seen as an additional critical source of data collection.

For a better understanding of children's needs it was suggested to erase the perception of so called 'digital natives'. With regard to critical information and privacy, people of all ages lack the necessary knowledge. Children are somewhat aware of the risks, but they are not increasingly savvy, as the Global Kids online study reveals. All Internet users must become aware of their shadow identity, and digital literacy is crucial. While managing children's offline lives requires adults in various roles, so far norms are lacking for the virtual space due to the fast development of the Internet.

Companies have a major role to play in ensuring children's privacy and protection and this becomes even more important with the IoT. Incentives for companies were suggested to design safe spaces for children who are not yet able to comprehend the various aspects of privacy. In addition, companies should be forced by regulation to refrain from monetizing the data of children under a certain age or requested to do so by self-regulation.

Another workshop, 'Collaboration towards and beyond child online protection', gave examples of programmes by UNICEF with other stakeholders such as ITU, IWF and GSMA. Challenges for collaboration are the varying and often contradictory legal regulations on child protection within various countries – for example, erotic poses from children can be considered illegal in Germany and still be legal in other parts of the world.

Examples were given from United Arab Emirates (UAE) on child Internet initiatives.

Susie Hargreaves (Internet Watch Foundation) emphasised the use of innovative technologies such as photo DNA, hashing and URL listing to take down illegal content from the internet. She mentioned that the relationship that the IWF has with partners such as Twitter, Facebook, Google, Microsoft and Yahoo is complementary in nature and has to be respected to ensure that the approach becomes more proactive and effective.

Dynamic Coalition on Child Online Safety – Internet of Things (IoT) and the rights of the child

This was an important session run by the Dynamic Coalition on Child Online Safety (DCCOS) and examined the implications of having many more devices such as toys and cameras connected to the Internet, such as security, privacy, the right to be disconnected, and enforcement standards.

Sonia Livingstone (London School of Economics) said it might not be obvious why we should bring the question of children's rights into the debate about IoT. A child rights perspective is related to protection but also to a set of rights around provision and participation, she said, and the Internet adds a new layer of challenges to a child rights framework and IoT crystallises

much of the anxiety that people already have in articulating children's rights in relation to the digital environment. The online world intensifies all kinds of phenomena we have already been struggling with in the offline world – children gain many kinds of benefits and the harm is intensified. Children's online activities are under the supervision of parents and teachers and now companies, which have unprecedented access to children 's data. Everything they do begins to be tracked which forces us to re-examine considerations related to their rights, and IoT is bringing new technologies to bear.

John Carr (adviser to the European NGO Alliance for Child Safety Online) felt that the IGF and the real world are two parallel worlds. There are those preaching in the Internet governance system for more standards but in the outside world there are many digital attacks and now millions of devices connected as part of the IoT and some are toys. You can now have toys and baby monitors connected to the network, and there are reports that they have been hacked. The carelessness of the industry has a huge potential to do damage, he said.

Jutta Croll (German Centre for Child Protection on the Internet) spoke about connected toys and the concept of safety by design, which would foresee what the implications of children using such devices in terms of putting their safety at risk. It is unrealistic to expect children and parents to act only on education, and industry has a role to play.

Arda Gerkens (INHOPE) added that we need to strengthen the right to be disconnected and also discuss the rights to data. We should make sure that children start at 18 years old with a clean sheet, and there should be laws indicating what kind of data can be collected from children.

Workshop – WePROTECT – Combating online child sexual abuse with the Model National Response (MNR)

This important workshop was billed under the cybersecurity theme but can also be placed under children and youth. Participants heard that never has it been easier for those who want to sexually exploit children to make contact with potential victims around the world, and that only a comprehensive, coordinated, global response that brings together governments, the technology industry and international and civil society organisations will end these crimes. The WePROTECT Global Alliance is that response.

The WePROTECT Model National Response (MNR) helps countries to establish and develop coordinated national responses to online child sexual exploitation. So far it has brought together 70 countries, 20 technology companies and 17 major international organisations including UNICEF and Interpol. The MNR is not prescriptive but rather enables countries to assess their current response, identify gaps and prioritise national efforts.

Innovation by the technology industry is crucial and the workshop used the development of Microsoft's PhotoDNA tool as an example of how industry can work to remove child sexual abuse imagery from the Internet. The need to tackle live streaming of child sexual exploitation and abuse was highlighted.

There was an overview of 17 countries that received grants from WePROTECT Global Alliance funding describing how the grants had helped build various elements of a MNR.

An open forum was held on the role of child helplines in reporting online abuse and in prevention for children and young people. Child helplines collect information on why children and young people contact them (from online violence and abuse to sexual exploitation, to psychosocial mental health). More than 47 million children and young people tried to contact a child helpline in 2015, participants heard. Sheila Donovan presented Child Helpline

International, and showed a video that described what child helplines do, and a video telling 'Maya's story' about a young girl groomed through social media.

CYBERSECURITY

Cybersecurity used to be a little-known concern in Internet circles, and one addressed mainly by the technical community. Not any more – of all the themes at IGF11, cybersecurity was probably the most cross-cutting among stakeholders from all parts of the Internet governance spectrum and the most urgent, occupying a dozen or more sessions. It is no exaggeration to say that 'cyber' issues will dominate Internet discussions for the foreseeable future.

While intergovernmental forums, in particular the Group of Governmental Experts (GGE) which operates under the First Committee of the UN General Assembly, may produce concrete policy, it is the IGF that is bringing dialogue and collaboration among all stakeholder groups – government, private sector, technical community and civil society – which is key to addressing cybersecurity challenges and contributing to an open, stable, secure and trustworthy Internet.

Highlights of the cybersecurity theme at IGF11 included a [Best Practice Forum (BPF) session](#), which built on the previous work of the IGF CSIRTS (Computer Security Incident Response Teams) and Spam BPFs. Its work was also guided by the WSIS+10 review process which produced an outcome document with a focus on building confidence and security in the use of IT, making an IGF BPF related to cybersecurity even more relevant. See below for a detailed report.

A particular challenge for those addressing cybersecurity is that with so many parties converging on the topic with a multistakeholder approach, there is not yet a common language or set of terminologies that can make dialogue and understanding easier. It is a highly complex and wide-ranging theme that now involves people in the development community; with the Sustainable Development Goals (SDGs) being a major topic at IGF11, concerns about cybersecurity and trust on the Internet are among the issues threatening to delay collaboration between those in development and the Internet community.

Indeed, [a key workshop at IGF11 combined the three topics – cybersecurity, development and governance](#) (see also below), recognising that since the WSIS review, cybersecurity has become part of the debate. However, there is still a lack of understanding if not fear among policymakers, in particular from developing countries, about cybersecurity and cybercrime.

The biggest tension currently in cybersecurity is the conflict between government demands for information and the rights of citizens and professionals such as journalists to preserve their privacy. In the case of journalists this can have tragic results if weak encryption leads to hacking by corrupt officials.

Consumers on the Internet have great concerns about privacy and security, and as the next billion come on line, particularly on mobile systems, these concerns will grow. While much emphasis at IGF11 was on protection by government and agencies, and on professional collaboration, there are also ideas about how citizens can become more aware of and responsible for their digital security. See the report from the workshop, '[Empowering and educating the next billion Internet users](#)' – issues include how the terms of using mobile apps can be made easier to understand, whether more safeguards can be built in, and wider use of digital technologies such as mobile money. And see also the workshop, '[What makes cybersecurity awareness campaigns effective?](#)'

Finally, a topic related to the infrastructure theme is that changes to the Internet can affect issues such as cybersecurity, as highlighted in a workshop on the move towards IPv6 (see the workshop, 'Can law enforcement catch bad actors online anymore?').

Workshop: How do cybersecurity, development and governance interact?

This workshop reported that:

- Cybersecurity capacity building plays a crucial role to achieve the Sustainable Development Goals (SDGs) and to ensure access and connectivity
- The involvement of all stakeholder groups is important (including international and regional organisations, governments, other policymakers, as well as other implementers, the private sector and civil society); and that the integration of cybersecurity capacity building needs to be in all development projects
- There is a need for a comprehensive approach, including both top-down and bottom-up, to enhance cybersecurity capacity across global and local spheres
- There is a need for cybersecurity tools, models and frameworks to enable implementers to make cybersecurity capacity an integral part of development projects.

The WSIS review process showed that cybersecurity has become part of the debate. However, there is still a lack of understanding among policymakers, in particular from developing countries. An outcome of the WSIS process was the importance of multistakeholder approaches and policy options and frameworks to tackle cybersecurity issues.

Currently, cybersecurity guidelines, regulations and national standards from governments create compliance issues that result in fragmentation of the internet. This goes against the idea of mainstreaming cybersecurity in developing countries to ensure connectivity and access, and help to achieve the SDGs and the information society.

The Cybersecurity Capacity Maturity Model (CMM) from the Global Cyber Security Capacity Centre was presented as a good practice. The evidence-based framework aims to benchmark a country's cybersecurity capacity, and to enable policymakers to make strategic investments for a more secure and inclusive cyberspace. The CMM looks at cybersecurity capacity through the five dimensions crucial to building a country's cybersecurity capacity: cybersecurity policy and strategy; cyber culture and society; cybersecurity education, training and skills; legal and regulatory frameworks; and standards, organisations, and technologies. Since 2015, the CMM has been deployed in over 45 countries alongside key stakeholders, such as the World Bank, the Commonwealth Telecommunications Organisation, the ITU, and the Organization of American States (OAS).

A national perspective on how cybersecurity capacity building efforts are linked to national development goals and integrated in the ICT development strategy was given by a panellist from Colombia. Besides environmental sustainability, economic development and social inclusion is the second pillar for the country's development approach – and ICT is seen as the catalyst to achieving its objectives. The requirement for that is that citizens trust in the internet and cybersecurity plays a key role in the digital policy.

For the World Bank, the Internet is perceived as a tool which contributes to the organisation's two overarching goals: to end extreme poverty and to promote shared prosperity. It is moving away from large infrastructure development projects to ones that connect rural areas to bring people online. These kind of projects often have a lack of understanding for both the opportunities and risk, and so cybersecurity capacity building is becoming integrated into them.

Panellists agreed that there is a lot to be done. One of the issues is the disconnect between different stakeholder groups, in particular between the development and cybersecurity worlds. Many of traditional development projects in infrastructure and transportation which require large investments still do not contain cybersecurity elements although most of those projects have a link to ICT and the Internet. The OAS is working with the World Bank, Inter-American Development Bank, the Global Cyber Security Capacity Centre and Microsoft to provide evidence and indicators for the need for cybersecurity capacity building.

Best Practice Forum on cybersecurity

Cybersecurity featured in two linked Best Practice Forum sessions at IGF11 that proved to be oversubscribed, showing the importance of practical approaches to this key topic.

The BPF was conceived by the IGF Multistakeholder Advisory Group and builds on work by the BPFs on spam and CSIRTS.

The first was a Day 0 event, Creating spaces for multistakeholder dialogue in cybersecurity processes. Matthew Shears (Center for Democracy and Technology) asked for thoughts on participating in cybersecurity spaces. How easy has it been for different stakeholders? How do we open doors to participate in cybersecurity spaces and what do we need to do?

Tatiana Tropina (Max Planck institute) said that from her 15 years' cybersecurity experience that it is important to be clear about what is being discussed as there are different stakeholders for creating frameworks for cyber-crime and digital investigations than for national security issues, and also for critical information infrastructure protection. She said that while there is a criticism about fragmentation of efforts there are different issues in these domains, although there can be overlap. There are also two levels: national and international. Some cybersecurity spaces, particularly on national security, are also the province of international governmental experts and not open to multistakeholder working, although there are ways to have dialogue on safeguards and human rights among government, civil society and industry. She mentioned the Freedom Online Coalition, which has made recommendations on how to make cybersecurity policy more human-rights oriented. There is room for both top-down and bottom-up processes – think about different domains, set clear goals, think where you really can contribute and then many even closed doors will be opened, she said, noting that her institute has worked at national level on legislation reforms.

Carmen Gonsalves (Netherlands government) said her government is one of the founders of the Global Forum on Cyber Expertise, a multistakeholder platform for best practices and policies. The GFCE has 55 members from governments, intergovernmental and international organisations and private companies, and members say they value having a repository of knowledge and a place to exchange ideas on good practices and help that helps match members looking to share good practices, with capacity building at the heart of GFCE, she said. Projects include a global awareness campaign for educators and for creating safe cyberspace; a review of cybersecurity capacity in Senegal; and an expert meeting in Romania.

Belisario Contreras (Organization of American States, OAS) spoke about the way cybersecurity is being embedded in national policy development processes and with multistakeholder involvement. See www.oas.org/cyber for more on this programme, which was also presented in an Open Forum at IGF11.

Sowmya Karun (National Law University, Delhi) is a project manager in a cybersecurity team, and said that there has been increased attention to cybersecurity by the Indian government, including a national cyber-coordination center and a research fund dedicated to multistakeholder engagement. Policies have tended to be ad hoc, mostly reactive and not open

to stakeholders – a good example being a draft encryption policy that was withdrawn within 24 hours following huge public outrage owing to problematic provisions.

Walid Al-Saqaf (Internet Society) talked about the idea of collaborative security, and the Internet Society's trust framework, which has four elements – user, technology, networks and governance. He noted that the Internet Society has had success in working with organisations such as the OECD at governmental level on cybersecurity issues. A new Internet Society special interest group, on blockchain, is attracting multistakeholder attention. He also spoke about his own country, Yemen, where the Internet Society has funded a 'beyond the net project' to provide training for schools to establish their own cybersecurity guidelines. Also in Yemen, there was a good example of work by the Internet Society chapter along with ICANN helping to resolve crisis in lack of IP addresses; through a multistakeholder meeting, the government has been willing to open the door for more IP addresses to be bought by the private sector. Al-Saqaf used to be a hacker – and he mentioned that harnessing the expertise of hackers to identify vulnerabilities in critical infrastructure is a useful strategy.

In the discussion there was frustration voiced about the challenges in engaging governments in cybersecurity dialogue, and the importance of civil society taking a lead was noted. But a government spokesperson said it is important not to take an adversarial approach, recognising that politicians intend to do good and are also aware that if the government operates without consulting citizens then actions are not going to be well understood. Further, such participatory democracy should not just be limited to the cyber realm but within broader Internet governance. At international level it also must be recognised that many countries are not democracies, and this puts constraints on international dialogue at high levels.

It was stressed that government officials need to be aware of how the Internet works when it comes to addressing cybersecurity. There is no 'on-off' switch.

A distinction was also made between a multistakeholder approach – which may not be achievable at all levels – but at least a multidisciplinary approach.

A question was asked about metrics – there is a lot of qualitative information, but quantitative data on cybersecurity is harder to come by, and funding for research also limited.

Matthew Spears closed the session by urging people to read recommendations on human rights and cybersecurity drawn up a Freedom Online Coalition working group.

Best Practice Forum on cybersecurity – main session

This second session in the BPF picked up the themes of the preliminary session and the following found consensus among participants.

- The involvement of government, private sector, civil society and other stakeholders in handling cybersecurity was stressed as fundamental in terms of sharing best practices, sharing results of critical assessments and identifying globally accepted standards of cybersecurity. All stakeholders must understand, respect and trust each other's expertise and competences.
- It was emphasised that to many today, the word cybersecurity is often loaded with context, and organisations may associate it with government decision making, or commercial security solutions. Within the IGF, it was said, there is an opportunity to redefine cybersecurity as a common goal between all stakeholders, and to work towards finding a common understanding about what productive cooperation and collaboration might look like.
- It was also said that the cybersecurity can mean very different things to different stakeholders depending upon the context in which it's being used – national security,

public security, enterprise security, incidence response, personal security, protection against large scale data breaches and cyber-crime/online crime, uncertainties about how data is being used, surveillance and other online threats, etc.

- There was agreement that the roles and responsibilities of stakeholders are evolving in making the Internet a secure and safe place for people to socialize and conduct business. It is clear that security is no longer just the purview of governments and that it is increasingly a multistakeholder imperative.

- Evolving understanding of cybersecurity makes efforts to ensure the Internet is a secure and safe place an important focus of policy that requires input from multiple stakeholders. Having started from a technical perspective of cybersecurity and focusing on protecting information infrastructure, debate has rapidly broadened, bringing in many issues from cybercrime to secure access policies to data ethics and human rights.

- There was consensus on the notion that cybersecurity initiatives should be built on democratic, multistakeholder processes, ensuring the meaningful and accountable participation of all stakeholders, including governments, the private sector, civil society, the technical community, the academic community and users.

- It's imperative to promote more robust, effective and timely information-sharing, cooperation and coordination among cybersecurity stakeholders at the national, regional and international levels. Cooperation and collaboration are key in cybersecurity, not only to avoid duplicate work and analysis, but also to help new partners benefit from experience and expertise of others.

- The CSIRT community has automated information exchange where possible – ensuring CSIRT's ability to process information at an increasing pace is important. CSIRTs can often be short of qualified analysts, and allowing them to focus on harder problems that require expert review is critical. However, it is important to clarify that prior to any automated exchange taking place, it is crucial for stakeholders to set expectations about how data will be used. Sharing indicators may not be helpful if they are not used correctly, or are used for different purposes than intended. While there are typically many technical means of addressing a security incident, it is important that goals are aligned and expectations are clearly set.

- For CSIRTs to effectively work with each other, or other peers within the community, trust is a crucial requirement. Trust is typically not established through legal agreements, but through a history of working with each other. Developing trust is easiest when the objectives of organisations align. When organisations have as a goal to remediate the incident and restore operations, they all see value in the information exchange.

- There is a need for more civil society involvement in cybersecurity debates in all countries, and in particular in developing countries. More opportunities for education and awareness raising among civil society groups on cybersecurity should be supported. For cybersecurity cooperation and collaboration to be enhanced globally – and particularly in global South countries – the first step is to create a level playing field in terms of knowledge, skills and capacity for engagement.

Workshop – Cybersecurity initiatives in and by the global South

Given that the consensus of the Best Practice Forum was that the global South needs a level playing field in cybersecurity this workshop was timely. It was said that addressing cybersecurity is everyone's responsibility, as there is no central control for Internet security. The focus is on bottom-up collaboration, which requires trust. To build trust, the conversation needs to be structured to identify reasons why organisations need to collaborate and ways to do it productively.

A proactive approach to cybersecurity incidents is needed not only at the technical level but at the management level. Companies whose main business is not IT are now challenged to have

a secure network and how this affects their businesses. Building capacity is key, not only at the technical level but at the management level as well.

Regulatory frameworks around cybersecurity tend to focus on control, but having more data about what is happening in the network does not make the network more secure. The challenge for the technical community is to create more awareness among policymakers about what it is that actually makes the network more secure so the regulatory framework supports it.

Three cybersecurity projects funded by the Seed Alliance were presented:

- Establishing Tonga's national CERT (Computer Emergency Response Team) – included challenges in the Pacific Islands
- Protecting the TOR (overlay) network against malicious traffic – this project is analyzing TOR traffic and blocking malicious traffic
- BGP security in RENATA's infrastructure – the project focuses on the world's largest deployment of RPKI1, across the whole RENATA network. RPKI can be used by legitimate holders of IP resources to control the operation of Internet routing protocols to prevent route hijacking and other attacks.

Dependencies between infrastructure in the South and North does not only mean carriers and transit costs, but is also about limiting the level of exposure of traffic to external regulatory frameworks where surveillance is pervasive.

Collaboration is difficult, especially as understanding of how networks work is not the same at all levels and trust is not there yet. Efforts to strengthen collaboration platforms should be made, identifying knowledge and support partners to work with, especially from the technical community. Open source tools should be used and more invested in training staff.

Security is not something that is fixed once. It is an ongoing issue that requires a mindset that continually challenges the status quo.

Workshop: Free expression and extremism: An Internet governance challenge

This workshop falls under the cybersecurity banner owing to its links to security. Key issues raised   were:

- What is extremism? The definitions of both extremism and terrorism are contested and, to an extent, controversial. What definition can be applied globally that has a broad basis of support and multistakeholder buy-in?
- Does censorship, and more coercive content-based controls, have a legitimate place in countering extremism online?
- What is the role of citizen-led initiatives in countering extremism online, including counter-speech and online counter-extremist communications and activism?
- Overall, what are the appropriate ways to counter extremism online?

Carl Miller (Demos) spoke on the drivers of online extremism that have been identified in research. This includes the role of 'echo chambers', especially those on social media networks, that reinforce the world view of the user, and can lead to a hardening of belief and a deterioration of civil disagreement. It also includes an online disinhibition effect whereby people are more likely to act in aggressive, rude and disinhibited ways online due to the absence of cues that their interlocutor is another human.

'Reciprocal' radicalisation was also identified as a driver; due to the ease and quickness whereby people can identify and contact people on social media whom they profoundly and passionately disagree with. Miller pointed to the absence of 'digital citizenship' - a body of

norms and rules that could help people be responsible members of the online community and treat other members in a civil, polite and decent way.

Jonathan Russell (Quilliam) discussed his organisation's research into online radicalisation and extremist communications online, including 'Jihad Trending' and 'Virtual Caliphate', and recommended taking an approach comparable to offline strategies. He focused on communications approaches to countering violent extremism online, considering the centrality of narrative to the radicalisation process and to the effectiveness of extremist groups, and the preference for non-kinetic approaches given the uncertainty over definitions of extremism. There is value in capacity building efforts to create appropriate 'messengers' in civil society to lead these communications approaches, and he suggested they meet the 3 'Ps' – proximity, prestige and passion – to influence the target audience and create the desired attitudinal and behavioural change.

Discussion included whether censorship has a legitimate place on the Internet to counter extremism. There was a wide array of opinions, ranging from the belief that censorship has no legitimate place, in any context online, to the belief that there is a 'right' to censorship by online service providers especially. Most favoured Internet service providers and technology companies over governments in deciding what content is permissible online. There was consensus on how censoring or content take-down should happen: all speakers agreed the process should be transparent, have mechanisms for remedy, should be subject to oversight, contain protection for journalists and at-risk members of online communities, and should seek to establish common ground over the kinds of content that would be subject to take-down or blocking.

Counter-speech was also discussed, with challenges including breaking out of one's echo chamber, ensuring that online and offline approaches are joined-up and include action, and evaluating the impact of such work. Conclusions included the need to localise counter-speech to ensure that it had the desired impact with the target audience, and to focus much more on dissemination strategies to reach the target audience rather than simply message or content creation. It was recommended to learn from sectors such as marketing, defence and other social change areas, as well as from extremists themselves. Moreover, education to improve critical thinking can make extremist communications less effective, at the same time as helping to make more positive counter-speech. There was criticism came for governments that have been slow to adopt counter-speech as a response and for those in the mainstream media whose powerful influence on narratives often undermines counter-speech.

Legal landscape

[Workshop: Law enforcement, cyberspace and jurisdiction]

The key issues discussed in this workshop were access by law enforcement to evidence stored in the cloud, such as email; the tension between mandates for local data storage and the free flow of data across borders; and international cooperation.

Neide de Oliveira (National Working Group on Cybercrime, Brazil) provided an update on the situation in Brazil where rules on cyber-evidence are based on the Marco Civil law. The government can mandate local data storage for services used by Brazilians and can also block communication services that are deemed uncollaborative. Internationally, Brazil is advocating for more cooperation on Mutual Legal Assistance Treaties (MLATs).

Paul Mitchell (Microsoft) drew attention to the interplay between national and international law, pointing to the dispute between Microsoft and the US government over whether US prosecutors can gain access to email stored in Ireland. Despite such controversial cases there are frameworks for international cooperation (e.g. Microsoft responded to email data requests

related to the Charlie Hebdo attacks in 47 minutes). Yet, when dealing with data requests in one country, operators often face the problem of conflicting laws.

Nathalia Foditsch (American University) presented the cost and limitations of recent law enforcement actions. On average, it takes about 10 months to get a reply to an MLAT request. Yet, when discussing alternatives to the MLAT system, what needs to be taken into account is to extent to which proposals might foster further privatisation in the governance of the Internet. Among the dangers are data localisation mandates and risks of government hacking.

Emma Llanso (Center for Democracy and Technology) made a case for the importance of transparency in trans-border data flows not only for users, but also for governments and companies. Transparency enables accountability and individual empowerment and helps inform policy discussions and advocacy. She referred to the report of the Freedom Online Coalition Working Group on the state of play of data transparency. A major challenge to fostering transparency is the scale of big data management and the classification of data that is made public.

Bertrand de la Chapelle (Internet and Jurisdiction Project) said it is important to foster policy coherence, first by developing standards and processes for access to basic subscriber information. Establishing jurisdiction is particularly difficult: should it be the location of the server or of the company that counts when data requests are made? He argued that neither is optimal, and more criteria should be taken into account, such as the location of the crime or the nationality/residence of the person whose data is requested. Among the areas for cooperation to be explored are criteria for determining jurisdiction, due process mechanisms and harmonisation of standards on user notification.

Alexander Seger (Council of Europe) provided an overview of the solutions under discussion in the Budapest Convention on Cybercrime. The convention has 50 parties and 17 observer states and has a working group on cloud evidence that has released a set of recommendations. Without data, there is no evidence and no justice, said Seger.

A number of summary points were made:
- The current jungle of legal processes is unworkable for law enforcement, companies and users
- There needs to be training of judges and clarification of interpretations and intentions of laws
- Governments should consider other penalties, e.g. economic, rather than interrupting communication services (which in Brazil blocked 100 million users)
- In establishing jurisdiction, do not focus solely on the location of the data, but also on the person in possession or control as the key factor
- There is no single actor or group of actors that can solve the policy problems of the Internet and jurisdiction
- There is a need to foster real dialogue, e.g. between prosecutors and companies, to elicit cooperation while remembering that service providers must answer to the laws of their own lands
- Consider allowing companies to respond directly to foreign government requests.

And four goals for reforming law enforcement access were put forward:
- Improve efficiency of lawful government requests.
- Reduce government incentives for 'problematic' direct access to data (e.g. forced data localisation or direct requests which may put companies in conflict of national laws)
- Transparency and clarity for users, governments, and companies
- A framework for cross-border data requests which protects users' rights.

In 2017 the Council of Europe and in the European Union will propose actions which could be discussed at IGF12.

Workshop – On cybersecurity: Who has got our back?

This workshop continued the legal theme by looking at questions such as whether strong encryption is creating obstacles to law enforcement (such as with the FBI/Apples case); and how related issues (like data retention) impact both human rights and the stability, security and resilience of the Internet's underlying infrastructure.

Dominique Lazanski (GSMA) described the challenges faced by operators and the business community from the different legal requirements in the management of networks. She said regulations have led to tensions, especially with IoT, where standards are at an early stage.

Brian Bergstein (MIT) asked whether access to consumer data by law enforcement agencies should be allowed, stating that the response is broadly 'yes', but with caveats – e.g. not all the time and not through bulk surveillance. Access to data must be conducted in accordance with the rule of law in order to protect the right to privacy. However, law enforcement does have legitimate demands when it comes to the need to access consumer data, as well as responsibilities. This doesn't conflict with our right to use encrypted devices. There is a risk of the gap between the law enforcement and tech companies growing too wide, he said. We need to ask whether we are expecting companies to be the protector of our civil liberties in these debates, instead of governments and civic institutions – as citizens we need to safeguard democracy, democratic institutions and the legitimacy of accountability mechanisms. Democracy and civic institutions depend on transparency and the rights to privacy and freedom of expression are not absolute rights – governments need an auditable process that is transparent and open in order to be access consumer data. Without that, other 'behind the door' measures like hacking pose bigger threats to human rights. Technology should strengthen civic institutions – it is not sufficient to only ask whether something is good for privacy, but also whether it is good for democracy, civic engagement and human rights.

Tatiana Tropina (Max Planck Institute) broadly agreed with the points made by Brian Bergstein. She pointed to the long-standing practice of interception of communications and requirements that data be provided in readable format which has existed as long as phones have been used for criminal purposes. However, law enforcement has been subject to the rule of law. The difference with the FBI/Apple case was that the disclosure of information could 'endanger' everyone. We also need to distinguish between different types of data and for what purposes that data is sought. Technology companies should not provide master keys, backdoors and other technical measures that could result in access to data that is not subject to the rule of law for legitimate purposes.

Asad Baig (Media Matters for Democracy) framed the main question as whether there should be legal means for access to data. A weaker encryption system does not work in anyone's interests (as it can be exploited by anyone). He called on the need to consider a global perspective as a government is not a 'monolith' and there are a number of governments that can use weaker encryption standards against citizens, for example to attack journalists and human rights defenders. The debate should also be framed not necessarily as a question of privacy but one of security, including personal security – a better framing may be of 'security vs security' rather than 'security vs privacy'.

In the discussion it was said there is a serious challenge in the ways different regimes use technology and policy measures and how they affect cybersecurity – they will use the same technologies to very different ends, with implications for human rights. However, there are certainly existing agreements between countries such as Mutual Legal Assistance Treaties

(MLATs) which allow for lawful sharing and access of consumer data between countries that are on their own terms and situation-specific.

There is a tension here between those who develop technology and those who develop policies – sometimes there are solutions which are proposed which are not technically possible (e.g. to make technology that works in the hands of some and not others). One software developer referred to this as the exasperating demand for 'nerds to nerd harder'. Another participant spoke of a Mexican human rights defender whose phone was hacked by corrupt police officials who had been co-opted by the drug mafia – and which not only compromised her data but which tragically ended in the loss of her life.

Lawful and exceptional access to consumer data is important but only under very strict safeguards that respect the rule of law and there is a need to develop global standards and gain commitments from policymakers that protect encryption and network security and do not undermine human rights. There are governments which have committed to certain positions (such as the Netherlands) that should inform cybersecurity policy more widely. There is also a need for more transparency when it comes to data use, data sharing and access to consumer data by law enforcement – this will help private sector actors cooperate with the government in ways that are respectful of the public interest.

We also need more examples of where strong encryption has supported human rights, or where weak encryption has compromised rights and we need to collect and share these widely to inform our policies so that they respect human rights. It is not job of the media or private sector companies to protect civil liberties and human rights: they may have a role to play but we also need government to be transparent, accountable and have auditable processes.

It was suggested that this topic requires more intersessional work by the IGF to identify best practices.

Collaboration

Workshop – Working together: Collaborative security in local contexts

The first workshop with a collaboration theme addressed these issues:

- How does working together to address cybersecurity issues apply in the local context?
- What are the various aspects of the collaborative security approach that work, or that don't work in your situation?
- What does collaborative security mean for real practitioners?
- How do you get real consensus and collaboration at national and regional levels?
- How does the model of collaborative security apply to the Internet of Things (IoT)?

Olaf Kolkman (Internet Society) presented the collaborative security principles outlined in a recent paper from the Internet Society. These principles stem from an understanding that the open Internet has various aspects, and there can security implications, e.g. voluntary collaboration makes it hard to mandate security solutions.

Hiroshi Esaki (University of Tokyo) presented the outputs of a G7 summit where a commitment to a multistakeholder approach to cybersecurity was identified. He said IoT 'silos' were problematic for interconnectivity. More data sharing and consensual adoption of interoperable technology solutions across business sectors can be a benefit in the case of natural disasters such as earthquakes. Security by design and establishing a security operation centre are recent recommendations from the Japanese government. Finally, he mentioned the Internet Governance Conference in Japan that adopted a 10 point set of recommendations for their local environment aligned with the principles established by the Internet Society.

Nick Shorey (UK government) presented the objectives of the UK's national cybersecurity strategy and highlighted the correlations with the collaborative security principles. The creation of a National Cyber Security Centre in October 2016 provides an opportunity to build effective partnerships between government, industry and the public. Initiatives include real-time information sharing partnerships between government and industry, public campaigns to raise awareness, and best practice guides for businesses. The UK government recognises that resilience is dependent on international capacity building, including support for the CyberGreen Initiative.

Yurie Ito (CyberGreen Institute) presented the objective of CyberGreen, which is to consider an environmental approach to cybersecurity. The traditional approach of borders and threat models is increasingly outdated: actors also need to consider the threat they pose to other users of the network. The idea is to identify systemic risk conditions and collaboratively remediate them. This is a lot like a public healthcare approach. Metrics and transparency provide the motivation for operators to take action and provide vital information for policymakers. There is a need to change the mindset that says you can protect yourself by yourself – working together is key to making the global network resilient to threats and attackers now and in the future

Moctar Yedaly (African Union Commission) explained that the African situation remains one of building capacity to deliver Internet services and to learn how to secure them. Threats into and out of Africa are not as important as what is happening in other regions, but things are developing quickly. The increasing number of Internet exchange points (IXPs) is helping to build the ground for collaborative security approaches in African countries. The African Union has taken the lead in cybersecurity collaboration but national and regional bodies need to be put in place. Collaborations with the Internet Society, the US State Department and China (Huawei) are helping.

Discussion   points   included:

- There is a need to ensure that governments understand their responsibility to secure critical infrastructure without resorting to drastic measures like Internet shutdowns
- While the cyber domain is naturally global, we need to consider the specific needs of discrete geographies when considering cybersecurity practice
- Practical measures are inspired by transparent measurements and 'virtue signalling' is important. Funding challenges for measurement activities like CyberGreen are ever-present and messaging about the interdependence of cybersecurity is fundamental to changing minds, but it is challenging to make this argument and make it scale across many operators
- Incentives to being a good Internet citizen should be encouraged
- Government can be a source of problems too, for example a lack of investment in infrastructure means lots of unpatched devices in school networks
- Building cybersecurity into school curricula from the earliest level and designing programmes for policymakers to build a cadre of cybersecurity educated professionals will help
- IoT devices are fast and cheap, but not all secure – how are we going to deal with this global vulnerability? IoT obsolescence and software update issues are concerns. Responsibility should be shifted from users to device vendors – they have greater power
- The public sector procurement process can be useful. Regulating to require meeting technical specifications for best practice may be required.

Workshop – Let's break down silos in cybersecurity and cyber-crime

This workshop identified best practices for cooperation in enhancing cybersecurity or fighting cyber-crime. It took a debate form with no presentations and gathered interest from about a dozen organisations in developing nations. Most said it was not possible to come to IGF11, and they were also not able to participate well online. A variety of organisations – from government, civil society and the technical community – shared their insight. The principles discussed were mainly generic to any collaboration and can be found in the workshop report.

An important point made was that the IGF is the only conference where all these different organisations meet.

Workshop – What makes cybersecurity awareness campaigns effective?

This workshop raised several key issues, including:

- Risk perception in relation to different cultural environments (e.g. in an individualistic vs collectivist society), socioeconomic situation and demographics (e.g. women, older people, children); and how risk perception influences compliance with policies and guidelines for cybersecurity
- The reasons why cybersecurity awareness campaigns often have little impact or even fail to change behaviour
- Good practices for different target groups and the stakeholders that need to be involved in the planning and the implementation process of awareness campaigns
- Influencing strategies and best implementation approaches to change people's attitudes and behaviours
- The issues which need to be considered when adapting campaigns to other cultural and organisational settings, and different target groups.
- The existing metrics to measure the impact of cybersecurity awareness campaigns and possible metrics that could be considered.

Michael Kaiser (National Cyber Security Alliance) described his organization's campaigns in the US such as Stay Safe Online, Data Privacy Day, and the National Cyber Security Awareness Month.

Barbara Marchiori (Organization of American States) described the Cybersecurity Awareness Campaign Toolkit, developed by her agency. It provides guidance and resources for developing a cybersecurity awareness campaign that educates citizens about safe attitudes and behaviours when using the Internet, and helps build a national culture of cybersecurity.

Jorge Fernando Bejarano (Ministry for ICT, Colombia) mentioned initiatives such as the campaign We Protect You in Colombia and Cyber Voluntarily in Spain which targets adults and children.

Maria Bada (Global Cyber Security Capacity Centre) noted the campaign, CyberAware, a UK government initiative which aims to create awareness in organisations and the general public; the South African Cyber Security Academic Alliance (SACSAA); and the campaign CyberSafe in Malaysia, a government initiative tasked with educating and enhancing the awareness of the public on the risks people face online.

Speakers discussed how changing behaviour online requires more than providing information about risks. The panel agreed that people must be able to understand the advice provided, and be able and motivated to apply the recommendations. Often, people are not aware of the associated risks or do not fully understand what the correct behavior may be.

The discussion focused on the factors which influence human behaviour and trigger change such as the messenger who communicates information, the messages used, the incentives

provided, and culture. Furthermore, different influence strategies (e.g. fear invocation), used in existing awareness campaigns and their effectiveness in changing behaviour were discussed.

Speakers debated which factors define best practices. The key elements identified as important were resources that will ensure the sustainability of a campaign, being targeted and linked to the national cybersecurity strategy, and ensuring multistakeholder involvement not only during the planning of a campaign but, in particular, during its implementation.

The discussion led to a review of existing metrics for evaluating the effectiveness of cybersecurity awareness efforts. Quantitative data can be measured by collecting information such as the number of visits to a website, time spent on a webpage, and the number of followers on social media. Qualitative data measure perceptions, attitudes, and the sense of trust in the Internet. The presenters emphasised the difficulty of collecting qualitative data at large scale or at a national level.

Presenters advised that not too much importance should be given to the main message of a campaign but to the sub-messages providing advice on specific issues. These messages are the ones that users will have to remember. Also, the key factors that can lead to a campaign's success were agreed, including simple, targeted advice provided by the correct messenger that is linked to national goals, and taking into consideration cultural differences.

Reporting mechanisms were also identified as important for the effectiveness of awareness campaigns. A key takeaway is that more coordinated effort is needed from both public and private sectors so that users have a clear understanding of who to report to.

Another suggestion was related to parenting and the fact that children avoid speaking to their parents but tend to speak to their peers when they have a negative experience online. It is suggested that more efforts are necessary in schools to raise awareness and educate not only children but also parents.

Lastly, the need for large-scale metrics was identified to help evaluate cybersecurity awareness efforts. A good way is using consumer research approaches.

HUMAN RIGHTS ONLINE

Human rights took centre stage at IGF11 with a main session, 'Human rights: Broadening the conversation'. This is not new for the IGF – concerns about human rights in the digital age have been discussed since 2006, and the Internet Rights and Principles Dynamic Coalition was established at the IGF in Hyderabad 2008. But there has been much progress in the IGF and elsewhere on 'digital' human rights.

For example, the DC on Internet Rights and Principles has issued a document that defines a number of new digital norms, and there are initiatives such as the Brazilian Marco Civil and the Italian Bill of Internet Rights. At IGF11, a German initiative for a new European Union charter of digital fundamental rights was presented (see digitalcharta.eu).

It is becoming clear that individuals have the same rights online as they do offline and as such there is no need to 'invent' new human rights but there is a need to continue to develop understanding of existing rights. The adoption of the Universal Declaration of Internet Governance Principles at the Netmundial conference in Brazil in 2014 was also a major step forward, but these principles need mechanisms for implementation.

There are international bodies that can translate the IGF discussions and the Netmundial principles into concrete action, including the UN Human Rights Council with its special

rapporteurs on freedom of expression and privacy in the digital age – it is said to be a strong intergovernmental body which has opened itself to more involvement of non-governmental stakeholders, using the IGF debates as inspiration.

That debate was to the fore in the main session. It examined civil and political rights (CPR), economic, social and cultural rights (ESCR) and linkages between the two classes of rights.

On CPR, it was reported that the Human Rights Council resolution on the promotion and protection of human rights on the Internet has taken hold and states now know that they are being scrutinised, and they can no longer claim that there is no clear framework of human rights on issues related to the Internet. But despite ESCR's long history, they are still not being addressed on an equal footing, and with the same weight, as CPR, including in debates on Internet governance.

The indivisibility and equal status of CPR and ESCR was emphasised, and as was the close links between ESCR and the Sustainable Development Goals (SDGs) through the right to development.

A separate workshop highlighted the [Global Information Society Watch's 2016 report on economic, social and cultural rights and the internet, which was announced at IGF11.](#) See also [here](#). Another workshop also explored [the internet and ESCRs, and working from experience to policy](#).

A cross-cutting topic is the rights of children and young people. See also the report of the workshop, '[Children's rights to privacy, safety and freedom of expression](#)', in the gender and youth theme, which homed in on the UN Charter on the Rights of the Child (UNCRC). Another is the rights of disabled people, such in the workshop '[Bridging the digital device gap for the blind through technology](#)', which clearly has a place in the access and diversity theme too. Similarly, rights in certain regions also cross into access and diversity, as discussed in the workshop '[The right to access the Internet in Latin America](#)', while legal aspects in Asia were explored in '[Strategic litigation in defence of freedom of expression online in South and Southeast Asia'.](#)

One of the IGF's new 'lightning' sessions was entitled: '[Human rights online: What has Internet governance got to do with refugees?](#)' This was spurred by data from the United Nations High Commission for Refugees (UNHCR) that estimates that over 65 million people have been forced from home; over 20 million are refugees and more than half are under the age of 18. Internet access and mobile phones play a pivotal role in providing information, helping families to stay connected and giving newcomers the necessary tools to being able to start a new life in another part of the world.

Considering that offline rights should also be protected online, is enough being done to ensure equal access and to protect the rights refugees and displaced people? What sort of political, technical and social cultural challenges arise in order to enable and protect the rights of refugees online and allow their participation in the online environment? The session explored these issues with various country examples.

Finally, concerns about journalists and press freedom surfaced in several workshops and also in the cybersecurity theme. In one workshop, '[Encryption and safety of journalists in the digital age](#)', highlights from UNESCO's study, Human Rights Aspects of Encryption, were presented by Wolfgang Schulz, who said: "Encryption impacts both freedom of expression and privacy; encryption and anonymity empowers journalists to browse, read, develop and share opinions and information without interference." He cautioned against restrictions put on encryption on the basis of theoretical speculation of risks, rather than evidence.

Guy Berger, UNESCO's director for freedom of expression and media development, explained that the publication was conducted in the context of UNESCO's endorsement of the [Connecting the Dots Outcome document](#) that "recognises the role that anonymity and encryption can play as enablers of privacy protection and freedom of expression, and facilitates dialogue on these issues".

Dynamic Coalition (DC) on Internet Rights and Principles

This session noted that the DC's Charter of Human Rights and Principles for the Internet is now firmly grounded as a working document, having been translated into 9 languages and used by stakeholders around the world for human rights advocacy for the Internet. There is a need to continue translation into more languages.

When death threats go viral: Defending human rights in the face of orchestrated harassment campaigns on social media

The main part of the meeting was a roundtable discussion co-organised by Amnesty International among members of the IRPC, invited human rights experts and activists and online services providers to cover issues such as cyber-harassment and other emerging forms of techno-censorship – in particular the growing trend of orchestrated troll networks on Twitter. It discussed how online service providers, regulators and civil society can manage these threats to ensure the protection of human rights online.

Tanya O'Carroll (Amnesty International) said civil society actors and regulators struggle to understand orchestrated misinformation campaigns. There has been a process of commercialisation of defamation – small public relations (PR) companies have sprung up in Mexico and are spreading fake news and seeding scandals about prominent voices in civil society and human rights advocates. This does not only have a chilling effect for reporting but makes it dangerous to be a journalist. This has long been the case in the offline environment, but is now the case online

Alberto Escorcio (*Yo Soy Red)* presented on techno-censorship and where such practices are taking place in Mexico. Mobilising on online media platforms using hashtags has become crucial and is now the main way that people organise, but organisers have had to fight increasingly sophisticated 'bot' attacks, and this is also happening in other countries such as China and Russia, and there is also a move to combine online with real attacks on the streets.

Paulina Gutierrez (Article 19) noted that Mexico's civil society organizations are highlighting human rights given increasing attacks on women and journalists, but prosecutors think that online threats and attacks are not important. Article 19 believes that online death or rape threats, especially those that go viral, are real threats.

Amalia Toledo (Karisma Foundation, Columbia) said that Columbia shares the problem of a high level of violence against human rights defenders. While the online troll trend is less apparent, in a recent election a presidential candidate used hackers to influence public opinion, so it is likely to become prevalent in Colombia and other Latin American countries. Activists cannot use the Internet to organise as penetration of the Internet in conflict areas is low, but those who do are more vulnerable, because they are not aware of the risks. The threat against female journalists is much higher than against men.

Marcel Leonardi (Google) noted that Google now offers Project Shield to protect individuals from distributed denial of service (DDoS) attacks. But there is also an issue of self-censorship. Lawsuits against a journalist or Twitter account holder can bury a person under legal costs. Google is therefore now starting to give support to organisations that help in these legal

battles. The company is also cutting off advertising revenues for malicious campaigns but there is no 'magic bullet' among technology solutions. Google makes hundreds of changes to search algorithms trying to identify these issues.

Suggestions include:

- Prepare guidelines for citizens on how to identify attacks
- Principles help set a framework, but there is a need for strategies to make them concrete and applicable
- There is a need to translate/transform principles to make them accessible to people who are not human rights defenders or journalists
- Cultural and national variations need to be taken into account
- Because attacks are sophisticated, complex and diverse, the response needs to be sophisticated, complex and diverse
- We need to be critical of suggestions for regulations.

Workshop: Linking connectivity, human rights and development

Issues raised at this workshop – which are also relevant in the access and diversity theme – included

- Mandatory registration policies and identity verification requirements can negatively impact access and connectivity
- Connectivity gaps will not be solved by the private sector acting alone, but rather require partnerships between international finance, multilateral, and multistakeholder institutions in conjunction with businesses, civil society, and governments
- Content serving rural, last mile, and marginalised communities should not depend on text based communications, due to illiteracy
- Businesses depend on guidance from local communities and civil society stakeholders to ensure sustainability and efficacy of connectivity development projects.

Mario Viola (Institute for Technology and Society – ITS Rio – Brazil) presented a case regarding the blocking of uncertified mobile phones by the Brazilian telecoms regulator (Anatel), in which ITS Rio highlighted the possible impact on the rights of the users, especially the ones from low income classes, who are the main users of these uncertified phones, which are the main way for them to access the Internet.

Gender issues are a focal point, as well as the manner in which people access the Internet. Women are 50% less likely to use the Internet than men in some communities. In parts of India, for example, in patriarchal families women are not allowed to touch mobile phones. Some village edicts declare that women are not allowed to have devices. If women are not afforded private access to the Internet, they are less likely to engage online.

Mandatory identity requirements and device certification policies should be avoided in Internet access and connectivity programmes, platforms and initiatives. Governments should not require registration to purchase SIM cards, national ID programs should not be linked to Internet access, and access itself should not be seen as a privilege but as a right.

Key infrastructure stakeholders at the international level, including finance ministers, lack an informed perspective about the key role of ICTs in economic and social development. The connectivity discussion must be grounded on inclusion and diversity. The digital rights approach should take a primary role. Researchers should focus on the global South, and ask,

what are the dimensions of access? The human rights voice is often missing as well. Programmes like Global Connect attempt to give visibility to human rights considerations.

In conclusion:

- Policymakers should ensure that connectivity policies do not require legal identity documents to access digital services
- Initiatives promoting connectivity and investment in ICTs must bring civil society and local communities to the table as equal stakeholders
- The Human Rights Principles for Connectivity and Development, currently being drafted by multiple stakeholders, led by Access Now, provide guidance. Such principles should be incorporated into the safeguards, investment and development policies of finance institutions.

Workshop – Surveillance and international human rights law

Key issues raised at this workshop were:

- The legitimacy of surveillance in the context of universal and regional human rights systems
- The principles of legality, legitimate aim, necessity, adequacy and proportionality in the surveillance practices of governments around the world
- Authorities in some countries are developing massive surveillance from telecoms operators, including metadata retention, without adequate legislation to be more accountable and without a clear framework of control.

Participants heard that the right to the freedom of opinion is an absolutely right and needs to be protected. Objectives of surveillance need to be clear and proportional. Surveillance operations can be extended to other targets as activists and organisations. How we can extend more protective measures to protect citizens and have more accountability on surveillance at an international level? Regulation in some countries is opaque, especially in national security.

In some countries, telecoms companies are compliant with surveillance measures with no legitimate, clear and proportionate objectives. It is useless to have clear laws if no one is checking whether those laws are being complied with.

As an example, when a vague new telecoms law entered into effect in Mexico, the number of authorities that asked for user data spiked. Some Latin American countries do not have precise laws regarding new forms of surveillance. Surveillance has to pursue legitimate interests and has to be necessary and proportionate.

Data protection agencies are not scrutinising requests for government information requests and have issues to resolve in metadata collection and analysis, the geolocalisation capabilities of devices and services, and their use in any kind of investigations.

Conclusions:

- Civil organizations need to encourage telecoms companies to challenge surveillance orders requested by governments and be more accountable to be more effective in protecting people's privacy
- It should be emphasised that Internet governance covers principles in the regulation of new technologies and potential violators of the privacy of people

- Civil society organisations must be attentive to emerging regulations relating to surveillance, the accumulation of personal data and all processes that compromise privacy, as there are substantial differences between local laws and international reality, especially in data exchange.

Freedom Online Coalition (FOC) Open Forum

Carmen Gonsalves (Netherlands government) gave opening remarks discussing the founding of the FOC in 2011 and highlighting its role as a coordination body and the multistakeholder working groups.

Gisela Pe´rez (Derechos Digitales) raised concerns about government use of spyware and other online tools against journalists, activists, and opposition leaders in Mexico without judicial oversight and called on the government to protect journalists, investigate violence committed against journalists and activists by cartels, and curb its monitoring and persecution of activists and journalists, including by Mexican security services.

Rebecca MacKinnon (Ranking Digital Rights) noted that several FOC member governments showed declines in scores in the Freedom House 2016 Freedom of the Net report. She voiced concern that the existence of the FOC has not prevented this regression, and that FOC has lacked the tools necessary to address the issues. She also suggested that the FOC re-examines its admission criteria and how it evaluates its existing membership.

Gigi Alford (US Department of State) highlighted the proposals made by a strategic review on updating the FOC's membership criteria and development of internal measures to evaluate current Coalition member compliance.

Deji Olukotun (Access Now) presented the FOC with a petition carrying nearly 50,000 signatures from 148 different countries calling on world leaders to end government-sponsored, intentional disruptions of Internet and mobile services as part of the #KeepItOn campaign. The campaign documented at least 51 shutdowns in the first 11 months of 2016, and asked the FOC member governments to work together to counter this troubling trend.

Justin Keyes (US Department of State) noted that the FOC committed in October 2016 to issuing a joint statement on network shutdowns, with the governments of Ghana and the US leading the drafting process for the FOC with input from external stakeholders.

Workshop – Implementing human rights standards in the ICT sector

Issues posed at the workshop included:

- The ICT sector may have a direct impact on individuals' capability to enjoy and exercise their human rights
- How can the ICT sector implement its responsibility to protect human rights?
- Actions by government (law enforcement requests, censorship, Internet shutdowns, ambiguous regulation, companies creating surveillance mechanisms to assist governments)
- Private regulation of content (lack of transparency, privacy policies and dispute resolution; imposition of global standards on local cultures)
- Telecoms infrastructure (Internet exchange points, submarine cables) also deserve attention, as they are important intermediaries in online human rights.

Luca Belli (FGV School of Law, Rio, Brazil) introduced the debate stressing that private entities have a responsibility to respect human rights and both private entities and state actors

have a duty to jointly provide effective remedies for human rights violations, although according to international law, states are the only actors bearing the duty to protect human rights. This is clearly stated in the UN Principles on Business and Human Rights.

Amos Toh (on behalf of the UN Special Rapporteur) spoke about a forthcoming report by the UN Special Rapporteur on Freedom of Opinion and Expression that will focus on the tension between infrastructure safety and respect of individuals' privacy and freedom of expression.

Rebeca MacKinnon (Digital Rights Ranking) discussed her organisation's project, mentioning public commitment to the respect of human rights, data collection and handling; reasons for account or service restriction; notifications of users' restrictions; and processing of data requested by governments.

Jamila Venturini (FGV School of Law, Rio, Brazil) presented the results of the research conducted by the Center for Technology and Society (CTS) at FGV that analysed the compatibility of the terms of service of 50 platforms with human rights standards. The research was conducted in partnership with the Council of Europe and Venturini highlighted some important results with regard to freedom of expression, privacy and due process, the latter being a novelty item in relation to the analysis of intermediaries' behavior.

Joa□o Brant (Observacom) commented on his experience in the Brazilian Ministry of Culture, where he presented a position related to the protection and promotion of cultural rights in view of the increasing normalisation of standards created by intermediaries.

Katie Shay (Yahoo) gave a brief history of Yahoo, talking about local action and how the company decided to engage in human rights issues, specifically freedom of expression and privacy. She commented on the programme created by the company to deal with human rights internally, the business and human rights programme.

Peter Micek (Access Now) brought a civil society perspective and described his organisation's work on the responsibility of intermediaries, focusing on Internet shutdowns, where he criticised governments and commented on how his organisation has acted in global spheres like the UN and also helping users with a digital security helpline.

Takeaways from the workshop included:

- Engage companies in the Global Network Initiative so they exchange information and follow human rights standards
- Demand transparency reports
- Spread best practices identified in the CTS/FGV Terms of Service and Human Rights report
- In addition to a multistakeholder model, also work directly with the private sector
- Advocate for initiatives like Yahoo's, which has created an internal commitment to human rights; assess human rights of new products, and of acquired firms and products
- Require transparency not only from intermediaries, but also from states and international organisations involved with Internet governance (e.g. IETF, ICANN)
- Carefully analyse the development and deployment of mechanisms that are related to content filtering, blocking and takedown. Stakeholders should help intermediaries to be responsible and accountable
- Require companies to be transparent with regard to takedown, blocking and shutdown orders they receive
- Participate in the construction of legislative proposals related to the responsibility of intermediaries that are emerging around the world.

Workshop – Decrypting sextortion

The workshop discussed sextortion, which is about non-consensual pornography (images and videos) that is can be threatened to share online. The current architecture of the Internet and social media make people vulnerable to large scale exposure of private information.

Issues explored:

- Disrupting sextortion with solutions that stem from interdisciplinary research; analysis of evidence based policy; effective multistakeholder good practices
- How self-disclosure behaviours affect sextortion
- Challenges and opportunities of using preventive technology to deal with certain forms of harmful content
- Challenges and opportunities around the criminalisation of non-consensual pornography
- The role of Internet intermediaries in content monitoring and take down tools
- The role of social and cultural norms on criminalisation and enforcement of sextortion cases.

Alejandra Cantón Moreno (Giesecke and Devrient) presented the results of a social engineering experiment she and her team conducted at the IGF where they asked more than 50 participants for information such as their name, company, email address – and only one person refused to provide personal information. She underlined how a few pieces of personal data could lead to identity theft and other negative outcomes.

Nicolás Ferreyra (University of Duisburg-Essen) introduced his research on online self-disclosure, stressing how people can be unaware or forget the fact that social media services and other online services used are not free of breaches like identity theft, stalking, information leakage and so on. He mentioned how everyone discloses vital, basic information and the fact that online and offline social norms of sharing information are not the same; users are emotionally unattached from the info they provide online compared to the real world.

Su Sonia Herring (Internet Society, IGF ambassador) quoted that found that focus on negative outcomes is not very effective as a discouragement and can have a 'forbidden fruit' effect. She also noted that many young people are more aware of consequences of self-disclosure than their adult counterparts and this did not prevent them from sexting or similar online sexual behaviour; so instead of focusing on negatives, educating youth and adults to take part in safer sexual online expression could be more beneficial. A participant mentioned how research on young people in India who use sexting and similar practices are very aware of what they're doing and the possible consequences and stated how the term 'excessive self-disclosure' may conclude in victim blaming/shaming.

Arda Gerkens, (Dutch Online Child Abuse Bureau) stressed the difference between consensual and non-consensual sharing while pointing out the serious consequences of sextortion, including the suicide of victims.

Jamila Venturini (FGV School of Law, Rio, Brazil) added how the language of terms of use are not easy to understand, which opens the way for companies to use data of their users more freely. She said that terms of use do not address freedom of expression as much as privacy, and when they do it usually refers to copyright issues.

Hanane Boujemi (Hivos MENA) said men are also victims of these crimes. She also said that taking down content may have implications in certain cultures since as it can be used to silence and censor LGBT or minority sexual expression online.

Ways forward include:

- Help pages and videos that enable users to better understand terms of use of online platforms
- Tools which ask for explicit consent prior to sharing sensitive information or videos/images
- The importance of awareness and education in preventing sharing sensitive information online
- Educating youth on safer sexual expression online instead of trying to ban it and/or use scare tactics
- Being aware that making the victim responsible can lead to victim blame in sextortion cases
- More transparency in the process of taking down content.

From the private sector perspective, the importance of dialogue between platforms and advocacy groups was mentioned as good practice.

More use of hash technology was suggested to combat re-uploading of known criminal content. The criminalisation of sextortion in countries such as US, Israel, Canada, Japan and the Philippines was cited as good practice, and it was highlighted that legislation should not be limited to only former partners but to anyone who shares explicit content without consent even if they do not know their victims.

Workshop – The 'right to be forgotten' and privatised adjudication

Key Issues raised:

- There is a need to better define what we call right to be forgotten
- The right to be forgotten is administrative censorship, not privatised adjudication
- If there is a right to be forgotten or delisted, it is possible to build a more balanced approach for intermediaries inspired by intermediary liability laws and principles (such as the Manila Principles)

Daphne Keller (Stanford Law School Center for Internet and Society) provided background to the European concept of the right to be forgotten or the right to be 'delisted', and settled the terms of the discussion as focusing more on the procedures platforms should follow for content removal, rather than on the debate around privacy/data protection vs freedom of expression.

Kyung-Sin Park (Open Net Korea) affirmed that the idea of a right to be forgotten is problematic in Asia, owing to some authoritarian regimes. Park pointed out that it can be an instrument for administrative censorship.

Lina Ornelas (Google) mentioned that the right to be forgotten is poorly defined, making it hard for companies to make decisions on what should be removed. She called attention to jurisdiction issues brought by orders of global removals, such as the CNIL (French data protection agency) case.

Christian Borggreen (CCIA) affirmed that the right to be forgotten is challenging for companies and that countries may have different approaches and are in a better position to define how to balance freedom of expression and other rights on what should be removed from the Internet. He mentioned the new General Data Protection Regulation (GDPR) in Europe, and that in Brussels the discussion has merged into a 'right to erasure'. The GDPR moreover

reaffirms the need for a balance between this right to erasure with the right of freedom of expression and freedom to obtain information.

Ce´dric Laurant (SonTusDatos) said the right to be forgotten is the wrong term to use. It should instead be called 'right to obtain deindexation' (or delisting) of one's name in search engines and should be considered as an application of the data subject's right to cancel or oppose data processing, which are rights recognised under the Mexican data protection legal framework. He analysed two cases that interpreted the right of cancellation.

Luiz Moncau (Stanford Law School) affirmed that there is confusion about the right to be forgotten in Brazil, mentioning that Brazil does not have a data protection law and most of the cases mentioned target traditional media (such as broadcasters) instead of search engines. On the procedural level, he said that there is concern about due process when there is no court involved and emphasised the risks for journalism if the debate turns on the idea of truthful information, as this is not always possible to assert.

Jeremy Malcolm (EFF) discussed the right to be forgotten from the perspective of intermediary liability and presented the Manila Principles that would apply to the right to be forgotten cases, such as: intermediaries should not be liable for failing to restrict lawful content; content must not be required to be restricted without an order from a judicial authority; penalties should be proportionate; intermediaries should not decide what is legal or not; abusive or bad faith content removal requests should be penalised; the person who posted the content should be heard; and the intermediary must be transparent about content being removed.

There was much detailed discussion in this workshop – see the report for more.

Workshop – Analysing the causes and impacts of Internet shutdowns

This session examined the how Internet shutdowns can disrupt access to large sections of the population during times of social or political turmoil, which can be short-lived or prolonged. (See also the complementary workshop, 'Inclusive responses to intentional Internet disruptions').

Brett Solomon (Access Now) touched on the situation in Gambia, where more than 50 Internet shutdowns have been reported, describing how the rights to freedom of expression, opinion, association, privacy and secrecy, are directly impacted by shutdowns, and also drew attention to recent studies that highlight significant economic impact. He called for an end to Internet shutdowns and stressed the role of movements such as the #KeepItOn civil society coalition, which fights to keep the Internet open by tracking disruptions and creating a pool of data to be used to review and respond to shutdowns.

Nicolas Seidler (Internet Society) spoke of the concerns over full network shutdowns, partial shutdowns and website blocking, and how they impact trust – a foundational pillar of the Internet. He observed that a single Internet shutdown is enough to plant the seed of unpredictability and take away trust, which is hard to earn but easy to lose. He said the economic costs of Internet shutdowns, while useful to advocacy efforts, are only short-term effects whereas the loss of trust is more of an opportunity cost.

Amos Toh (legal advisor to a UN Special Rapporteur) spoke about how Internet shutdowns can be blanket and surgical, how the reasons behind shutdowns can be pedantic at times, and how governments have evading scrutiny. He said that there are difficulties in detecting shutdowns that need to be addressed, especially when it comes to elaborate surgical shutdowns that involve throttling of networks. He also highlighted two challenges, namely

'flash shutdowns' – i.e. short-term disruptions that end by the time responses are even contemplated – and the cross-cutting impacts of Internet shutdowns on multiple economic and social rights.

Hibah Kamal-Grayson (Google) said her company is very concerned about Internet shutdowns, and tries to supply as much of its own data as it can to help. For example, google.com/transparencyreport/traffic shows recent and ongoing disruptions of traffic to Google products around the world.

Rajan Mathews (Cellular Operators Association of India) pointed out that mobile operators in India are licensed by the government, which means there are a number of nuances to consider such as individual vs. social rights when shutting down Internet services following Government orders. He also went over the situations in which Internet services are disrupted in India (national security, mob control etc.), and said the operators have not developed ways to carry out shutdowns in more surgical, narrow ways, though this is something they are looking to do.

Nanjira Sambuli (World Wide Web Foundation) expressed concern that if we say it is alright to shut down the Internet (even surgically) in the interest of national security or to counter insurgency, we risk normalizing such practices. She said the debate is a deeply political one involving flawed logic, and that it is important to engage more with the governments, especially those that issue shutdown orders, to better understand why they think such measures are necessary.

Gisela Perez de Acha (Derechos Digitales) went over the Internet shutdown incidents in Venezuela, Ecuador, and Mexico during elections to show how such measures amount to direct/indirect censorship. She said Internet shutdowns as a means to prevent rumor-mongering during elections are clearly excessive measures, that state-owned monopolistic Internet service providers (ISPs) contribute to the problem by easing the institution of shutdowns, and that problematic laws that enable Internet shutdowns need to be examined. She also said we need to explore incentives to have telecoms operators keep Internet networks open even if they run the risk of getting into trouble with national laws.

Jan Rydzak (Global Network Initiative) pointed out how Internet shutdowns are becoming more common in democracies, and is no longer a problem limited to non-democratic countries, though we can rely on countervailing forces to keep the impact of these shutdowns to a minimum. He also noted how an increasing number of shutdowns are instituted as preventive measures before incidents of violence/public turmoil even occur, how shutdowns are becoming more surgical than broad-based country-wide shutdowns (as in Egypt), and how various national laws enable arbitrary shutdowns of the Internet. He also stressed the need to account for inaction/inertia as enablers of Internet restrictions rather than just overt actions, greater focus on the role of telecoms operators, which are bound by national laws, and better implementation of international law and court rulings within national laws.

The discussion found consensus that Internet shutdowns amount to censorship. It was felt that there needs to be better common understanding on the term 'Internet shutdowns', and that it should be understood to cover both blanket and surgical shutdowns of the Internet. It was also said that stakeholders must be mindful when engaging in the debate to not legitimise the practice of surgical shutdowns by accepting them in the name of national security and preventing insurgency.

On the question of whether the ideal responses to Internet shutdowns should be legal-centric or aimed at the broader 'mindset' driving Internet shutdowns, the participants leaned towards the latter, though it was also noted that there several national laws that are problematic as they are outdated and/or drafted without sufficient multistakeholder consultation. It was said

that we are being cornered into reactive responses when it comes to reviewing and modifying laws, which makes it all the more essential to engage governments on why they think things should be a certain way. It was also felt that there is a lot left to be done in terms of linking the rights-impact of Internet shutdowns to its economic impact, i.e. it needs to be demonstrated that enabling free expression can lead to sustainable economic growth.

Some participants observed that it is necessary for civil society and other stakeholders to address their concerns on Internet freedom at the formative stages of laws, rather than wait for these problems to solve themselves. It was acknowledged by the panel that national security is at times a real concern and that thinking in bubbles will do little to arrive at workable solutions that are acceptable to all involved and mindful of all relevant concerns.

Organisations were urged to join the #KeepItOn coalition, which has over 100 members from around the world, and serves as an alert network that keeps everyone updated on legislation and shutdowns as they take place. A best practice document is being drafted by the coalition to outline how telecoms providers can stand up to Internet shutdowns, based on international law and practice. The coalition is also drafting a response kit for civil society actors, including model legislation, letters to legislators and regulators, arguments that work in response to shutdowns etc. Additionally, it was pointed out that the office of the UN Special Rapporteur on Freedom of Expression maintains open channels of communication with governments and periodically sends them legislative proposals, which are also made publicly available. This was highlighted as a possible avenue for putting across concerns about problematic laws before governments and government agencies.

It was felt by some that it would be beneficial to have systems that let the public know whenever telecoms operators are given executive orders requiring Internet shutdowns, rather than having to rely on information leaks and speculative reports. Seeking transparency/clarifications, seeking to delay, calling for meetings, contacting peers/other stakeholders, and pointing to the costs were all highlighted as steps that could be taken by operators when asked to shut down the Internet. It was also felt that having a one-page document that could be given to local law/policymakers in moments of crisis, which explains the issues in a simplified manner, could prove beneficial for officials who are not very tech savvy and might be inclined to institute Internet shutdown as responses to particular crises.

SUSTAINABLE DEVELOPMENT AND THE INTERNET ECONOMY

This theme was addressed extensively at IGF11 in the two main sessions, 'Assessing the role of Internet governance in the Sustainable Development Goals (SDGs)' and 'Sustainable development, Internet and inclusive growth'. The session on inclusive growth was particularly relevant to exploring links between sustainable development and the Internet economy and was split into three sub-sessions – inclusion (women and youth), capacity building (and obstacles to inclusive growth), and local relevant content.

There were many points made in the sub-sessions – among the most important:

- There is huge potential that is not tapped because of lack of opportunities to develop women entrepreneurs
- Strong and broad support from government, accompanied by enabling policy and regulatory frameworks, are essential for any plans to enable inclusive growth. Examples of such frameworks include those that encourage innovation, create national broadband plans that address both supply- and demand-side needs, enshrine Internet access as a constitutional right, and codify ubiquitous connectivity for everyone
- Favourable conditions, including incentives, are needed to encourage investments and financing of infrastructure initiatives, especially those that are capital intensive
- The cultivation of digital skills for teachers is indispensable

- At the infrastructure level, innovation is needed to enable last mile access to remote villages that are not on national power grids and/or pose geographical challenges to traditional telecoms infrastructure. Other technologies such as Internet exchange points enable cost-effective routing of traffic
- There are many young people entering the workforce in developing countries – making sustainable change for poverty, health, education and other goals will need jobs for them so they can provide resources for families and communities. Many new jobs will need ICT skills.

A major issue in capacity building is to be able to demonstrate the benefits of connectivity to those who are either unconnected or have chosen not to connect – approaches that can work include UNESCO's global movement on information literacy, and peer learning in community settings.

There was agreement that there is a critical need to support local languages and local content to enable inclusive growth. Key points include:

- With more locally relevant content, the user experience will be improved and more users will see the benefit of connecting to the Internet – it is a virtuous circle
- Government services can drive people to go online and so provide conditions for more investment
- Locally produced content now has a much larger potential global market. For example, only 26% of content is locally produced in Latin America, but with the Internet, any of the 300 million Spanish speakers around the world is a potential consumer
- Barriers for creating content should be removed, intellectual property issues addressed, and support provided for the media and arts communities. Sharing content needs appropriate platforms
- The World Intellectual Property Organisation (WIPO) participated in IGF 2016, showing the convergence between intellectual property (IP) and Internet governance. A balanced and well-functioning IP system contributes to inclusive and sustainable growth on the Internet by providing guarantees and incentives for innovation to take place and for creators to flourish
- There are important questions on how to finance the production of local content and how they can be monetised.

Above all, given how critical the Internet and ICTs have become for both developed and developing economies, civil society and the private sector must build bridges with government officials and be as inclusive as possible to have any chance of achieving any of the SDGs. If partnerships can be built and maintained it will greatly increase the chances that robust information infrastructure (ICTs and the Internet) will be built and used.

Internet of Things (IoT)

There were two workshops dedicated to IoT and sustainability issues.

In the first, 'Harnessing the Internet of Things to realise the SDGs: What's required?' key points included:

- IoT can be applied to all SDGs in varying degrees
- Stakeholders should not forget the human element of using technology
- Light touch and flexible policies are needed to avoid stifling innovation
- IoT applications need to address local environments and community needs
- Prevailing digital divides highlight the need for capacity building programmes to identity opportunities for using IoT

- Security and privacy implications of IoT should be addressed while ensuring policies do not create barriers to the cross-border nature of services that will be important to achieve the SDGs.

Ariel Barbosa (Colnodo) described the ways in which IoT can be used for agriculture. For example, drones can be used to take photos of crops and send them for chromatographic analysis in a mini lab. He noted security as one key challenge for IoT applications that needs to be overcome as smart 'things' will be active participants in information and social processes. He also highlighted two ideas: IoT and health, such as in a real-time air quality monitoring platform for people with asthma, and optimising systems for higher performance and more energy efficiency, which is key to achieving the SDGs.

Jennifer Chung (DotAsia) explained why the deployment of IPv6 is crucial to reap the benefits of IoT. DNS Security Extensions (DNSSEC) are also important to mitigate privacy challenges. Each device would have its own domain name and be on its own local network.

Noelle Francesca De Guzman (Internet Society) gave examples of how IoT can be used in disaster management. For example, in India it can be used to monitor temperatures; in Japan, solar powered sensors are used to monitor changes in weather as a type of early warning system to alert communities if there is higher risk of flash floods etc. If a victim is trapped under rubble, sensors can detect where he or she is. She encouraged clarity on policy, legal, and regulatory structures and consideration for privacy and security challenges.

Peter Major (UN Commission on Science and Technology for Development) highlighted that the SDGs are inclusive and should leave no one behind. He described why this is important to remember as we tend to forget about the human factor in the Internet governance environment and focus only on the technical elements.

Ricardo Pedraza Barrios (Communications Regulatory Commission, Colombia) suggested IoT could be the next digital divide and noted that governments from developing economies should be more involved in policymaking. Colombia, as a developing economy, is working to structure policies in an open manner with local stakeholders.

Paul Rowney (AfICTA) underscored that without good infrastructure, the deployment of IoT remains problematic. In Africa, while striving towards universal access, a massive digital divide still exists. This is compounded by poor and often absent legislation. While governments understand the role that the Internet can play in development, with a lack of infrastructure and legal and regulatory frameworks, the Internet for all will remain a dream.

Jackie Ruff (Verizon) noted the importance of considering spectrum investments. IoT will have a wide range of uses and to drive innovation, and a flexible regulatory environment is needed. Services using IoT need to be seamless across borders to embrace their potential (healthcare, for example).

The second workshop, 'Internet of Things for sustainable growth' developed the theme with examples. Briefly:

- Sam Paltridge (OECD) presented especially on the data volume produced by IoT applications, especially in transport
- Shadi Abou-Zahra (W3C Web Accessibility Initiative) stated that IoT has the potential to further enhance accessibility for people with disabilities
- Thales Marçal (Ministry of Science, Technology, Innovations and Communications, Brazil) shared the Brazilian experience with the national IoT plan

- Marcia Ogawa (Deloitte, Brazil) said that IoT strategies need to be broken down in smaller pieces to adapt to the changing nature of supply chains, which are not linear now due to transformations in technology and consumer behaviour, and that governments can bring actors together to build local ecosystems
- Pedro Malo (University of Lisbon) talked about trends in IoT and European plans, noting that challenges lie in resources needed for smart cities and how IoT can be monetised nationally
- Amos Vutsa (FarmerLine, Ghana) shared his views about data collection gaps in rural communities. He said projects could focus on longer range, low cost and low energy consumption to enable sustainable business models and allow farmers in Africa to benefit from simple information delivery systems.

To meet future demands for transit of vast amounts of data produced by IoT, more infrastructure will be needed, including exchange points. Keeping traffic local is an aim. Private networks will play an important role to deal with the increasing traffic that does not necessarily need to pass through the open Internet (such as data from sensors). Standardisation will continue to be important to make sure systems are interoperable.

Workshop – Digital economy and the future of work

This important topic considered that:

- There is a need for all actors to identify and address skill deficiencies to better prepare work forces for the changes produced by the digital economy
- New technologies both create and destroy jobs; new work opportunities may need new training and new skills, and retraining and support is needed for those losing jobs
- As people are likely to have more than one career in their longer lifetimes, learning new skills and capabilities to adapt to new positions is crucial
- Social policies need to mitigate the effects of displaced workers
- Education should include soft skills that employers need
- More opportunities for young people from low income families are needed in both developed and developing countries.

Vint Cerf (Google) described how the social world we live in is like a biological ecosystem. A shift is taking place and participants in the ecosystem must adapt and learn how to survive. He also described how longer lives would necessarily change career patterns. As we are likely to have more than one career we need to keep learning new skills and capabilities to adapt to new positions. Technology creates and destroys jobs and the new work may need new training and new skills. It is important, however, not to try and jam people into pre-defined jobs, but rather fashion work for people to help them excel.

Helani Galpaya (LIRNEasia) provided examples of how the digital revolution has created a huge marketplace for skilled work in the tech sector in Asia. Thanks to new digital platforms for freelancing there are new sources of income. However, offline factors such as inability to prove income, thereby making workers ineligible for bank credits, is making many unable to reap the full benefits of new technologies. Many are forced to take up other part-time 'real world' jobs that often pay less.

Antonio Garcia Zaballos (Inter-American Development Bank) highlighted a mismatch between the skills supplied by schools and universities and the demand by industry. Actions that developing countries could consider, and development banks could support, include closer collaboration between governments, the private sector and academia to first understand the magnitude of the gap; and the involvement of the ministry of education to adapt or modify the curriculum so it provides young people with relevant skills for the digital industry.

Lilian Nalwoga (Internet Society, Uganda) reported that there had been a 15% increase in Internet users in Africa in the past 5 years; and that mobile activity had also increased by 35%, demonstrating how more people are taking advantage of the opportunities provided by the Internet. However, while there are opportunities, Africa still needs to overcome many of its infrastructure challenges.

Eli Noam (Columbia University) noted the following trends as key problems: under-qualified workers who do not have the right skill set to work with new technologies; over-qualified workers who are dissatisfied with their jobs; salaries, where young people who master the new technologies are often under-compensated for their large output of work, and older people are overpaid for under-producing. He suggested that the widening gap is not a skills issue but rather a compensation profile issue. He warned against moving towards a winner takes all economy where there is a big prize but only a few winners. As the digital economy is an unstable economy, it necessarily involves a level of risk that the older generations are least able to manage.

Lorenzo Pupillo (Telecom Italia) shared examples of how smarter machines and smarter people can complement each other to create a mass of customised products and services. To cope with the digital transformation of companies and even entire industries, strong public-private partnership is required to promote the diffusion of new, high skilled ICT jobs; support workers reskilling and retraining to take advantage of new ICTs; and design better social policies to mitigate the effects on displaced workers.

Gabriela Rocha (Laboratoria) described how her organisation identifies women from low income backgrounds in Latin America with potential but no access to formal education. She raised the point that currently higher education is the most important path to high-skilled jobs. However, youth from low income families do not necessarily have access to higher education. Alternatives are needed to train and educate the population. She said societies are obsessed with teaching technical skills but often forget about the soft skills that would enable students to grow in their profession.

Vincenzo Spiezia (OECD) described how the digital economy has the potential to enhance productivity, income and social wellbeing. It creates new job opportunities in new markets, and increased employment in some existing occupations. Nevertheless, as digital technologies enable the production of more goods and services with less labour, they also expose workers to the risk of unemployment or lower wages. He stressed that innovation is the real driver of growth and job creation and new technologies should be actively fostered in order for this growth to continue.

Workshop – Local content and sustainable growth

This workshop gave several examples and emphasised that local content is a broad concept, encompassing both non-commercial material and high-quality resource intensive creative production. Professional audiovisual content deserves special attention if it is to play its part fully in driving demand for Internet connectivity and use. The distribution of creative content can boost the development of connectivity – partnerships between the audiovisual sector and Internet and telecoms operators is of mutual strategic interest to both industries. It was reiterated that intellectual property rights are essential for emerging economies and local content production.

Cristina Gallego (Ciudalunar Films, Colombia) explained the challenges of engaging in a major indigenous production in a developing country like Colombia. She compared the position of creative independent film production companies to that of organic farmers, with a low-volume/high-value output that offers consumers a rich alternative to that from large conglomerates, thereby enriching cultural diversity and choice. She said making films to a

professional standard necessitated a complex system of enabling laws and regulations. As the consumption of films shifts from traditional media she said Internet video platforms offer opportunities for collaborative relationships that will help local independent films and help make local content sustainable and competitive.

Manuel Guerra (INDAUTOR, Mexico) emphasised the prominence of the cultural industries in general, and the film industry in particular, as contributors to Mexico's economy and cultural identity. The country is a net exporter of cultural products and services and its diverse cultural industries overall employ over 1 million people. The country is the world's tenth largest producer of feature films in volume: 140 films were made in 2015, the largest output in the country's history. The average budget for professionally made feature films is around $1 million.

Nicole Amarteifio (producer, Ghana) spoke about the development of the successful African digital series, An African City. She chose to bypass traditional sources of audiovisual content commissioning (e.g. linear broadcasters) and financed the low-budget first season of the show largely from her own savings. Season 1 premiered on YouTube where it rapidly gained a global African diaspora audience, The season was also tied to social networks, and she described the show more as a movement, as much as a TV show. Both seasons of the show were shot and post-produced in Ghana's capital, Accra, using local skills, infrastructure and services.

Bobby Bedi (Kaleidoscope Films, New Delhi) said the current transitional stage has made it challenging for audiovisual producers to monetise their content on non-linear platforms and platform operators are doing better. He thought that a more balanced relationship should be restored because the two sectors depend on each other to achieve growth – helping to keep local, professional content industries viable is in the interest of the Internet operators and platforms. The new digital paradigm needs sustainability and fairness of trade.

Gerardo Munoz (Televisa) described the strategy at Televisa, the market leader in locally originated audiovisual content in Latin America. He said the Latin American challenge is to develop a meaningful presence on the Internet. Currently, only 30% of traffic by Latin American consumers has local sites with local content as its destination. He said there were three tenets to address the challenge: language, production capability, and making culturally relevant content. Additionally, to compete with global over the top (OTT) platforms, local Latin American audiovisual content should be available online from any place and at any time convenient to local consumers and in a form that allows 'binge' watching of entire seasons or series. He said Televisa's status as a 'dominant undertaking' under Mexican law means it has to comply with rights acquisition obligations for local content. He also stressed the importance of copyright law in incentivising local content production.

Discussion points

- The discussion confirmed that in Latin America and other part of the global South, there is still a dearth of OTT platforms offering local content, raising questions about developing sustainable economic models for local platforms to finance, acquire, and make available culturally relevant content for local/regional audiences.
- Professionals on the panel were concerned about the rise in illegal streaming and downloads on the Internet. They felt that in some jurisdictions enforcement is not yet adequate to encourage consumers to choose legal options.
- Practitioners thought that high quality content on the Internet can have universal appeal even when not in English, but said it is important to find resources to dub and/or subtitle in world languages or other minority languages. Obligations for subtitling for those with hearing impairment was also discussed.

Workshop – Civil society and private sector build ICT support for SDGs

This workshop also applies to the access and diversity theme and gave a number of examples of projects that are aligned with the SDGs.

Manu Bhardwaj (US State Department) first expressed concern that the digital divide remains a significant obstacle. Together with the World Bank, the US Department of State recently launched the Global Connect initiative to try to bring 1.5 billon people online by 2020. Some 65 global actions valued at $420bn have been identified, but more help is needed from industry and civil society to develop best practices and policies.

Gonzalo López-Barajas (Telefónica) highlighted the ProFuturo project launched with Spanish bank La Caixa, which aims to provide high quality elementary education in Latin America, Sub-Saharan Africa and South-East Asia. The programme a laptop computer in a suitcase, 25 tablets, a small projector and connectivity for school classrooms, digital educational content focusing on linguistic, science and life and health topics, and teacher training. The programme was first launched in 9 schools in Angola with 60 teachers and 2,700 students.

Salam Al Waeli (IJMA3) spoke about several projects run by the Arab ICT organization (IJMA3). They include enabling connectivity in Lebanon and the Women's Alliance for Virtual Exchange (WAVE) which is for women in the Middle East, North Africa and Central Asia. It is a collaboration platform enabling women entrepreneurs to share success stories and best practices.

Ellen Blackler (Disney) mentioned Latin America Kids, which teaches children how to use technology safely. In Africa, Disney has been involved with developing professional content for movies and television, and the company has worked with a company called Trigger Fish Animation to identify barriers to local programme development.

Wahab Sadaat (government of Afghanistan) said his country has launched several initiatives in recent years to improve development and connectivity. A gender equality programme has been implemented as well – a $260m programme with a duration of 5 years. The main focus is on integrating women in the economy, technology, leadership and in government. There is also a business incubator programme and fibre optic network are being deployed around the country to connect major cities. Education and health services are also being financed through a telecoms fund.

Iffat Gill (Code to Change, Pakistan) spoke about her project, Code to Change, which offers mentorships to women for changes in career and reentry into job markets.

Ailyn Febles (Union of Informatics Professionals of Cuba, UIC) said the UIC is a civil society organisation fostering the adoption and use of ICTs for social and economic development and has several SDGs in its sights, including creating a network of farmers and scientists using ICTs for food; building health apps such as for monitoring hypertensive patients; educational initiatives; and closing the gender gap in ICTs through the UIC. Ivan Barreto (Association of Pedagogues of Cuba) described a major project in Cuba that aims to provide technology and connectivity to all educational centres, training all teachers in ICTs, and is also generating educational content focusing on best practice.

Sarah Wynn-Williams (Facebook) said that 2 years before the SDGs, Facebook went to the UN and expressed concern about the lack of attention to connectivity. There was major resistance: hunger and poverty were the main focus. So the company was pleasantly surprised when SDG 9.1C was adopted, aiming for universal connectivity by 2020. This, of course, is unrealistic,

but it is an important start, she said, highlighting the 2015 Connectivity Declaration: Demanding Internet Access for all and implementation of the Global Goals, signed by prominent leaders from the global development community, technology industry, the arts and entertainment.

Sam Paltridge (OECD) presented the 2016 OECD study, 'Broadband policies for Latin America and the Caribbean', which focuses on many of the SDGs. In health, technologies like SMS can make a big difference to peoples' lives. For education, the report examines online training tools, including tax credits for training (example: Chile).

Jimson Olufuye (African ICT Alliance, AfICTA) mentioned AfICTA's 2016 summit in Namibia and the Windhoek Declaration, which spells out Africa's ICT challenges. The declaration states that national ICT policies within many African countries should be reviewed, that IoT presents an opportunity for job creation, and that governments should prioritise visa-free business-to-business regimes. Most importantly, AfICTA has secured much needed government commitments to help improve policies, laws and regulations, with policies aligned with the SDGs. AFICTA is committed to helping to create a million new jobs by 2020. It was also noted that Namibia will hold its first IGF initiative in 2017.

Among the concluding points, a call was made for a clearing house or one stop website where people can go to post success stories in tackling the SDGs with ICT.

Workshop – Networks and solutions to achieve the SDG agenda: Internet at play

The session heard that Internet technologies enhance trade, but harnessing them to achieve the SDGs requires collective thinking.

Vint Cerf (Google) pointed out that the SDGs are going to be addressed locally and this won't be successful unless stakeholders actually work together. He considered that incentives will drive effective collaboration – these may not necessarily be financial, but a platform as a means to an end, and he cited Google's Android operating system as an example. We may need to learn how to 'sell' the SDGs, he said – to be persuasive about how people get on board and what incentives are needed, and to appreciate each other's challenges and differences.

Other speakers offered examples as follows.

Jennifer Chung (DotAsia) spoke about how the Internet can be helpful for the conservation of tigers even though it is also one of the largest threats to the continued existence of this animal, due to online illegal animal trade. Wildlife conservation through the Internet not only connects with specific SDGs (such as climate action, life below water and life on land) but cuts across all of them, since it also involves education, infrastructure, etc. She recommended creating a set of best practices about policymaking in terms of SDGs.

Sorina Teleanu (DiploFoundation) shared how her organisation is engaged with capacity building through online courses on Internet governance, general development, diplomacy, and remote participation.

Anja Kovacs (Internet Democracy Project) spoke about India, where most of the main barriers result not from lack of connection to infrastructure, but to literacy and poverty. She highlighted the gender gap – lack of access for women to the Internet due to cultural barriers. It is important to focus on how Internet governance intersects with economic, social, and cultural rights, she said, noting that government decisions to adopt digital technologies exclude those not yet connected. She also commented that platforms such as Uber and Airbnb

can undermine workers' rights. Data management in development projects also poses big challenges for privacy and human rights.

Stuart Hamilton (International Federation of Library Associations and Institutions, IFLA) talked about how the library community can contribute to achieving the SDGs. An example from Slovenia is providing employment information for recovering addicts in collaboration with health providers. In Romania, libraries provide information about how to access subsidies online from the government. Libraries is Kyrgyzstan play a role in tuberculosis (TB) prevention, providing access to diagnosis and treatment services. In Uganda, libraries are reaching women and girls, as they are safe places to access the Internet. In Singapore, a green library space offers information about climate change and environmental conservation. In Mongolia, recording studios in libraries produce audio books for the blind. All these examples are directly linked to SDGs.

Phet Sayo (International Development Research Centre, IDRC) highlighted how people should not be seen as 'objects of development' but instead focus on how technology can allow people to achieve their dreams and aspirations, many of those encapsulated in the SDG framework. It is about environments for marginalised communities to own and design their own solutions, not only about being users of technology also used by others.

All IGF participants should think how their work contributes to the achievement of the SDGs and how to talk about this in the language of development, which helps collaboration.

Workshop snapshots

In 'ICT implementation in education: Roadmap to achieving the SDGs' it was said that by 2020, half of jobs will require ICT skills and transformation in education is required to achieve the SDGs. The workshop heard about education initiatives in China and Africa, including connecting schools and students with high quality online resources. National public platforms can also help build teachers' capacity to use ICT tools their work. New indicators and standards have been defined to evaluate the use of ICTs in education, participants heard.

A workshop entitled 'Competition in the digital age: Between the status quo and unknown' covered the regulatory landscape. Points made were:

- Regulation should be forward-looking to keep the pace with fast technological changes in the digital economy
- Dynamic regulations, i.e. regulations based on principle rather than on a detailed list of 'do nots', are better
- Regulation should be in the public interest: when this is the case, regulatory decisions become easier to take and implement
- It is important to look at the interactions among different sets of regulations, i.e. competition, consumer protections, employment protections, data and privacy
- A level playing field in competition is better achieved by lowering the regulatory provisions for all instead of increasing them for new entrants. Unfortunately, in practice it is the opposite
- Structural regulation is becoming increasingly difficult to implement and should be replaced by behavioural regulation.

There was consensus that frameworks and institutions should encourage learning processes about new forms of regulation, and participation of all stakeholders is essential in both the design and the implementation of regulations. Multistakeholder forums such as the IGF provide the environment for enhancing the participation of all stakeholders and their mutual learning.

Participants at the workshop 'Big data and the environment: a pathway to achieving the SDGs' discussed utilising big data to support information extraction and decision making for environmental issues. An update was given on Preservation and Access to Scientific and Technical Data in/for/with Developing Countries (PASTD), a task group of the Committee on Data for Science and Technology (CODATA). The group is responding to the international accord, Open Data in a Big World. PASTD will be working on open data policies and best practices, and capacity building, to support data sharing by developing countries in achieving the SDGs.

In 'Promoting innovation and entrepreneurship in the global South' case studies from countries such as India and Kenya were cited, as was the work of the SEED alliance and FRIDA programme. It was said that policymakers and entrepreneurs do not live in the same world – entrepreneurs do not understand frameworks, while policymakers cannot live without them. While barriers to entry are not high anymore, barriers to sustainability are still a challenge that need to be addressed. In the global South not many businesses have ambition to scale up – most are satisfied by breaking even, it was said.

In the workshop 'Smart cities in the global South: challenges/opportunities' participants heard about barriers to smart city projects in the global South, which include:

- Weak democracy and poor transparency of public actions
- Centralised mass media/controlled by public sector
- Data protection laws that are poor or absent
- Antidiscrimination laws – poor or absent
- Solutions developed by companies in the developed world that have little or no knowledge of the urban and social context in the South.

Speakers presented various smart city initiatives, including the Guadalajara program, which is part of the IEEE Smart Cities Initiative (SCI) (http://smartcities.ieee.org). It was noted that the ITU also has a smart cities programme (http://www.itu.int/en/ITU-T/ssc/Pages/default.aspx).

Much of the discussion focused on how to integrate sectors and guarantee human rights in the data-driven environment of smart cities.

MULTISTAKEHOLDER COOPERATION

This theme underpins the work of the IGF and was particularly prominent at IGF11 owing to the 10-year renewal of the IGF by the UN General Assembly in 2015. The endorsement of the importance of the IGF as multistakeholder platform for public policy dialogue was stressed by many speakers, not least in the main theme of the conference, relationships with the Sustainable Development Goals (SDGs).

The main session – 'Assessing the role of Internet governance in the Sustainable Development Goals (SDGs)' – featured a 'town hall consultation' with a multistakeholder dialogue between expert 'setting the scene' speakers and participants attending the session and engaged online. Panellists noted the importance of transparent and inclusive multistakeholder approaches to sustainable development, including the significant role that the IGF can continue to play in facilitating debates with diverse stakeholders such as those from the development community, in supporting the 17 SDGs. The need to address the challenges faced by women, youth, and older and disabled people in sustainable development was also emphasised.

Panellists noted that in ensuring that the Internet and other ICTs do in fact support sustainable development, it remains vital to put people first, not technology – this was a point made by other participants across the themes at IGF11.

An important milestone for the Internet governance community achieved shortly before IGF 2016 was the successful transition of the *Internet Assigned Numbers Authority (IANA)* functions to the multistakeholder community. The transition was finalised after careful planning by community volunteers, leading to productive exchanges about the post-transition IANA and new accountability mechanisms to ensure transparent and stable management of this crucial Internet function. At the IGF, various workshops and sessions endeavoured to learn from the successes and challenges of this important multistakeholder exercise.

Other issues where multistakeholder discussions were to the fore:

- A topic rising rapidly up the Internet governance agenda is the Internet of Things (IoT) and challenges such as standardisation, interoperability and security are similar to issues the Internet community dealt with in its earlier days, and offer substantial opportunities for multistakeholder cooperation. There were several sessions and workshops where IoT was explored
- National, Regional and Youth IGFs (NRIs) have been emerging since the IGF was convened in 2006. They are independent in their work, and organised in accordance with the core IGF principles of being multistakeholder and non-commercial in their organisation and work. NRIs were the subject of a main session at IGF11
- Trade agreements and the Internet was also a main session topic. It was emphasised that there is a need to ensure that discussions on trade policy are not isolated from broader multistakeholder discussions – and indeed that the IGF's 'bottom-up' philosophy can complement the often secretive nature of high level trade negotiations, helping to break down barriers and introduce more voices into these processes, albeit at an informal level.

One of the most famous Internet figures, Vint Cerf, engaged in a session that brought together young people with those with long experience, with the idea of probing how the younger generation can learn and become involved. He drew attention to the Internet Engineering Task Force, which "you can't join. All you can do is show up, and if your ideas get traction, then they'll proceed... I'd argue we should take your point and try some experiments. Instead of pigeonholing people into particular functions and categories, why don't we take problems and organise a multistakeholder discussion around the problem? That's what multistakeholderism is supposed to be about."

How to involve young people better was a particular theme at IGF11 and new formats such as the short 'lightning' sessions helped this cause.

The IGF closely monitors participation at its events, such as by counting the gender balance in sessions, and participants in sessions are always quick to point out where voices are missing, such as those from developing countries who may find it too costly to travel, or also find it hard to take part remotely. One speaker noted too that it isn't enough simply to 'tick boxes' and just get diverse participation – this can "maybe even make our multistakeholder processes look better than they actually are... So how do we bring people here that represent different views, different experiences, and keep them in the process for the longer term, make sure that their participation is about content, and give them the opportunity to learn?"

Uniting people around content can be challenging. For example, with topics such as cybersecurity where, because of the multistakeholder model, there are people coming together from many different backgrounds, but there is not yet a common language or common set of terminologies that helps the dialogue. Complex subjects like this will require much

preparation to unite technical interests with the social and political – but this is exactly what the IGF is for.

Workshop snapshots

Workshop – Aligning multistakeholder norms and the digital trade agenda

This workshop complemented a main session on trade policy and the Internet, and there was a variety of views about how open trade negotiations are to Internet issues and to the involvement of a wide range of stakeholders and indeed how open high level ministerial meetings are to non-government actors. Some pointed to processes that are open to multistakeholder involvement – which should be constructive and not critical – while others said certain processes are conducted in secret.

The workshop concluded that not all Internet issues have to be dealt with in trade agreements, but for those that are, there needs to be much greater transparency (for example, publication of text proposals by each party, and consolidated drafts after each negotiation round), and better accessibility to civil society of the consultation process.

It was suggested that the IGF should look at establishing a Dynamic Coalition on Trade.

In the workshop '**ICANN's new gTLD programme: Exploring impact and future directions**' the impact of the expansion of the Internet's namespace via ICANN's Global Top Level Domain (gTLD) programme was discussed.

There was much interest in the review processes and how these would lead into the policy agreement for any new gTLD applications. There was agreement on the need for community assessment of reviews before any new application process. There were concerns raised about the significant inequality of regional take-up of gTLDs in the previous round and how this should be addressed. Concerns were also raised about the protection of geographic names and two-letter country codes.

Then in the workshop '**Civil society experiences from the IANA transition process**' participants engaged in a detailed examination of the Internet Assigned Numbers Authority (IANA) transition, which concluded just 2 months before IGF11. It was said that that while there is a common understanding that the IANA transition is a successful case for multistakeholder working, there was also a need to challenge this view and talk about the civil society experience during the transition debates.

It said that the transition required the community to fix the accountability issues at ICAAN (Internet Corporation for Assigned Names and Numbers), and a culture of transparency is being worked on. But there was criticism that ICAAN is too elitist and not able to accommodate well the cultural diversity of civil society.

In turn, the workshop 'Reality of the answerability of multistakeholder model' discussed the 'answerability' of the multistakeholder model in organisations such as ICAAN and the World Intellectual Property Organisation (WIPO) and in issues such as cybersecurity and trade. It was said that answerability is one of the challenges we struggle with in the Internet governance system. For example, international organisations are answerable to governments and governments to citizens. But we have yet to find a way for determining how to be answerable to all stakeholders.

There has been mixed experience: for example, the WIPO Marrakech Treaty brought civil society participation to a process that is usually multilateral. For cybersecurity, there are some

closed spaces which co-exists with a multistakeholder model. ICANN was considered a success in this context and we should learn from the IANA transition process, as have been NETmundial and WSIS in parts.

Could there be a template for a multistakeholder model? Probably not, since there are various permutations. It was also highlighted that achievements with a multistakeholder model are possible because of cooperating together – whether the process was liked or not by the stakeholders.

Workshop – A new social compact for Internet governance

This important workshop looks at the social compact – as envisioned by the Global Commission on Internet Governance in its final report – as a normative, multistakeholder approach to maintaining and expanding a free and open Internet.

Latha Reddy (Global Commission on Internet Governance) described the key elements of the social compact and why, despite the fact they seem self-evident, they are deceptively difficult to move forward. For instance, the social compact is based on the recognition of fundamental human rights, a concept that is interpreted in widely divergent ways. Even elements that are generally agreed, like the need for more cyber-literacy, require more resources to build worldwide.

Sally Wentworth (Internet Society) said the report illustrates the interconnectedness of all Internet stakeholders and used the concept of collaborative security to frame the social compact – i.e. everyone who uses the Internet is dependent on each other, so each person and stakeholder sector has a role to play in ensuring a trustworthy and open Internet. She also noted that any security approach must be able to adapt to the constantly evolving Internet.

Pablo Hinojosa (Asia-Pacific Network Information Centre, APNIC) gave a critical view of the social compact. He questioned the need for a new process to establish a normative social compact, given that work to support an open and secure Internet is ongoing in other forms. He also questioned whether the concept of a social compact is too rooted in Western thinking to translate to other regions.

Emily Taylor (Global Commission on Internet Governance) described the report's scenario-building process as a good exercise that outlines the potential consequences of acting (or not acting). She noted that the work ahead was difficult but quoted Winston Churchill: "When you're going through hell, keep going." She acknowledged the potential for interdisciplinary research in Internet governance, noting that people from different disciplines are becoming more interested in the topic and have new and valuable perspectives to contribute. Finally, she referred to the "uncomfortable truth" that states have a role to play in protecting human rights online, especially by countering the "state-like power" of private companies.

Eileen Donahoe (Global Commission on Internet Governance) called for an end to the paradigm that places digital security and human rights in opposition to each other, noting that digital security is a crucial human rights issue – for example, when activists are censored online or put under surveillance by digital technology. As such, she said, there are opportunities for new alliances. She also said multistakeholderism is the best or possibly only way to achieve greater inclusion, diversity and trust.

The main topic of debate was whether the social compact could be interpreted as a 'one world government' solution. Alejandro Pisanty (Internet Society, Mexico) said discussions that have been sparked by the report include whether it was seeking one single, global, uniform social

compact, which would be counterproductive to attempt. He noted that he didn't personally believe this was the report's aim, but that it could create that damaging perception.

Other participants questioned which, if any, institutions or enforcement mechanisms would be required to enact the social compact. The panellists emphasised that the social compact is not intended to be a formal plan for implementation, but instead a strategic framework, or a set of guidelines for how to approach Internet governance challenges and debates, and that the Global Commission on Internet Governance strongly advocated for a disaggregated, multistakeholder approach.

Two participants identified what they considered to be unique contributions of the report. Ambassador Thomas Fitschen of Germany said it was the first time a group of experts "actually challenges us" with a glimpse of the kind of broken, dangerous future for the Internet that could emerge if its current trust issues are not solved. Michael Walma of the Canadian Foreign Affairs Department (who disclosed that the Canadian government helped fund and promote the report) said he appreciated the report's assertions that Internet governance doesn't have to be a zero-sum game, and that it is possible for everyone to gain – but only through the difficult work of multistakeholderism.

There was also discussion of whether global conferences such as NETmundial or the IGF could help advance the social compact's vision. Jeremy Malcolm of the Electronic Frontier Foundation said this kind of 'proactive' approach may be needed to achieve such ambitious goals. But Alejandro Pisanty argued that such overarching international agreements or conferences always have limitations, and instead it would make more sense to "move pieces that will eventually lead to an assembly of compacts that actually work instead of a single one that you don't achieve".

It was suggested that that the report's recommendations could be raised at G20 and G7 meetings, and that multistakeholder groups participating in those meetings could build on the report to develop policy that moves toward the social compact vision.

Workshop – Multicultural and multistakeholder capacity building

Key Issues raised included:

- To create a multistakeholder model that is truly inclusive, subject matter needs to be built from the bottom-up
- Language is still a barrier to participation and limits multiculturalism and multilingualism, which should be part of any true multistakeholder process
- While there are tools and opportunities available to increase participation in Internet governance and build a more balanced and diverse model, there are still a lot of improvements to work on.

The moderators described capacity building initiatives since the first IGF, including national and regional IGFs, schools on Internet governance and other dialogue spaces. The discussion examined the success of these initiatives through shared experiences and outcomes with the barometer of success being capacity building that accurately reflects the multistakeholder model, especially in terms of multiculturalism and multilingualism.

Panellists shared their experiences in bringing together a diverse and balanced set of stakeholders. Barriers include demonstrating relevance, the need for outreach and economic barriers. Demonstrating the relevance of Internet governance and in particular 'debate space' is a reflection of the content. Panellists said it is important to cover a variety of topics and invite a diverse set of presenters and speakers. To address outreach, panellists discussed the

importance of the bottom-up approach. Building subject matter from the bottom up not only ensures that content is relevant to a variety of stakeholders, but it is also engaging and encourages people to take part in the process.

Regarding economic barriers, some suggested that paying a small fee would make the participants value the time more, but most believed that free participation is the best way forward. However, it was mentioned that free is not really free, because travel and accommodation costs are beyond the means of many. This led to the panel raising the importance of fellowship programmes and also the effectiveness of participating remotely. Most agreed that the remote participation tools are valuable and make Internet governance spaces more inclusive, but it was acknowledged that it is not equal to on-site participation.

A major issue brought up by the audience was that while discussing a topic about multiculturalism and multilingualism, the session in the room was not translated. Another question was about creating a national IGF and how to identify the content of the forum in a way that is engaging and inclusive. A common denominator was that the subject matter needs to be built in a bottom-up fashion.

Workshop – Finding ways to build confidence in stakeholder legitimacy

The topic of stakeholder legitimacy has been discussed very little in multistakeholder Internet governance. There was a presentation to explain the difference between input and output legitimacy. Input legitimacy is about how fair a process is perceived, and a part of that is the perception that all stakeholders participate equally and equally abide by the agreed rules of procedure. Output legitimacy is about the quality and 'fit for purpose' outcomes that a process produces. The presentation quoted from a 2015 paper: "Legitimacy becomes most important when conflicts arise during the multistakeholder process. In these instances, the groups had to assert stronger forms of legitimacy." See 'Multistakeholder as governance groups: Observations from case studies'.

Discussion

The participants in the workshop were from governments, civil society, the private sector and the technical community. There were no participants from intergovernmental organisations.

Issues raised by participants include:

- There is no 'one size fits all' approach that can be used to establish legitimacy that will work across all Internet governance processes. Do we need 'policy menus' for ways to improve stakeholder legitimacy?
- Internet governance is currently using an understanding of multistakeholder that was developed during the WSIS process, 2003 to 2005, but the environment has changed and the number of stakeholders have grown, so it may be time to rethink and revise the model
- Legitimacy can mean having a basic understanding of the topic, and having 'skin in the game'
- Silos created by grouping stakeholders into separate groups can create competition and doubts about the legitimacy of other stakeholders. One possible way to prevent the need to justify stakeholder legitimacy is to bypass the concept of stakeholder groups completely, and focus on issue- and interest-based discussions
- Legitimacy shouldn't be an attribute assigned solely to those who have the resources to show up' and participate

- Lack of resources makes it difficult for some incoming stakeholders to understand the basics of issues and processes, let alone be able to participate long enough to establish their legitimacy in the eyes of existing stakeholders:
  - There are challenges in using quality of input or participation as a guide to legitimacy as unpaid stakeholders, or stakeholders who do not get paid to do Internet governance as their full-time day job, are often expected to participate on the same level as people who are funded to concentrate on particular Internet governance processes as a full-time job
  - It is important to find ways to enable newcomers to establish legitimacy in the eyes of the established community they are entering so they feel empowered to participate early. (It was noted that newcomers who have a negative early experience in a process often drop out of that process and never return)
- The culture of stakeholders being able to 'speak in my personal capacity' while being paid or nominated to represent a wider group of stakeholders can present challenges to the perception of the legitimacy of input
- Equally, giving equal weighting (one voice, one input) to one person speaking for a wider group of stakeholders and who may be the only dissenting voice in a process, can pose challenges for the perception of the legitimacy of outcomes
- It is not always the stakeholder or stakeholder group that works to assert its legitimacy, but sometimes it is the entity facilitating a process that has the authority to make decisions about which inputs to consider relevant to the process (e.g. calls for public comments)
- Methods of establishing legitimacy within stakeholder groups or communities:
  - Self-selection of members in long-established trust networks is an informal way of blocking members (or would-be members) that are not viewed as being good-faith players. But can also be problematic as it can prevent newcomers being able to enter processes
  - Peer pressure can be an effective way of 'culling the herd' of players who won't respect the process and its community's rules.

Other issues raised that were not directly related to legitimacy of stakeholders, but were related to the difficulty of ensuring a greater range of voices can be heard in the multistakeholder model include:

- The possibility of having different levels of participation and engagement, so that there is the possibility for less resource for incoming/new stakeholders to engage at the edges before moving into 'deeper' participation models.
- For stakeholders from developing countries, multilateral processes can be viewed as more open to the input of developing country stakeholders, due to the one country, one vote model used. Multistakeholder processes, on the other hand, because of the resource constraints on developing country participants, can exclude their voices and therefore be viewed as less legitimate venues for decision-making
- As well as legitimacy of stakeholders, there is also the need to consider legitimacy of goals: not all goals in Internet governance are created equal
- Process legitimacy can alienate stakeholders: if the process is made too complex, it prevents all but the best-resourced and well-versed insiders from participating
- Transparency is an important factor in assuring others of the legitimacy of the process and its actors. However, transparency is not the same as publishing hundreds of transcripts and setting up many mailing lists; too much information can result in making the process non-transparent. Better ways are needed to make processes easily accessible and understandable to newcomers.

Participants expressed interest in continuing the conversation on the topic of stakeholder legitimacy after the meeting. A mailing list will be created for interested stakeholders to continue discussions on the topic. See http://linguasynaptica.com/stakeholder-legitimacy

Workshop – Civil society experiences from the IANA transition process was a detailed examination of the Internet Assigned Numbers Authority (IANA) transition, which concluded just 2 months before IGF11. It was said that while there is a common understanding that the IANA transition is a successful case for multistakeholderism, there was also a need to challenge this view and talk about the civil society experience during the transition debates.

Workshop – The power of non-commercial users on the Internet

The workshop was organised by the Non-commercial Users Constituency (NCUC) of ICANN to discuss the failures and successes of the non-commercial users in Internet policy.

A success is that non-commercial users have been able to help ICANN implement respect for human rights as a core value within its bylaws. At ICANN, they have also succeeded in achieving a better balance between trademark protection and rights to freedom of expression and access to knowledge.

At the IETF, activists have also succeeded in drawing the attention of the technical community to human rights. Meanwhile in country code top-level domains (ccTLDs), non-commercial users can now get involved with policymaking more than ever.

Other successes include the defeat of SOPA/PIPA bills on intellectual property protection in the US in 2012, following online campaigns and petitions led by civil society organisations such as EFF, and Wikipedia and companies such as Google. Another recent success can be seen in the efforts of the Keep It On coalition of more than 100 organisations led by Access Now, which has mobilised thousands of individuals against Internet shutdowns, bringing back access in several countries in Africa. These successes can be partially explained by the partnerships that civil society has developed with other stakeholders.

The failures discussed include lack of coordination and conflicts within civil society. Two cases noted concern threats to privacy. Within ICANN, despite the efforts of non-commercial users, contractual requirements related to the WHOIS database and in the Registrars Accreditation Agreement continue to pose risks to the privacy and data protection of domain name registrants. Another example is the trend for laws to legalise government mass surveillance, contrary to the efforts of civil society following the Snowden revelations. In both cases, civil society actors questioned have attributed these failures as stemming from the organisational and regulatory environments, more than their specific actions or inactions.

Another issue addressed was the lack of funding for non-commercial actors (especially in ICANN but also elsewhere) that is needed to engage in a way (and with a presence) commensurate to that of commercial entities.

Concluding points:

- Non-commercial users should share their achievements more widely with other stakeholders
- Sometimes the efforts of non-commercial users are diluted in organisations that do not have membership or stakeholder groups, such as the IETF
- It was clear from the discussion that civil society has to coordinate more within its own groups and with other stakeholders.

EMERGING ISSUES

On the final day of the IGF there was a main session, 'Shaping the future of Internet governance', in which the one of the key and recurring issues at the meeting was discussed in depth – how to involve and develop the next generation of young participants in the work of the IGF and in Internet governance around the world. This is not a new issue but can be seen as 'emerging' as very important now.

This session provoked conversation between young and older generations about the state of art of the Internet ecosystem, proposing a future agenda. Throughout the session it was emphasised that the Internet governance community should continue to provide education and capacity building opportunities for young people, and it was said by several young people that the IGF can be a daunting experience and it can be hard to get their voices heard in some sessions.

Some highlighted the need for formal school/university training while others said that immersion of young people in the work is most important as this would give young leaders more legitimacy to influence policy and decisions in the complex and always changing Internet governance field. Internet fragmentation is a topic that has risen up the agenda of various meetings – including at a high level at the World Economic Forum in Davos, for example, and was examined in two workshops at IGF11.

Workshop – Internet fragmentation: Net neutrality

It was recognised that there are different concepts of Internet fragmentation – technical fragmentation (developments in the underlying infrastructure that impede systems), governmental fragmentation (policies and actions that constrain or prevent the use of and access to the Internet), and commercial fragmentation (actions and policies that prevent or constrain the exchange of resources and access to information). Threats of fragmentation may come from any of these, at both global and national levels.

Also, it was highlighted that the Internet works well without strong structural oversight by any international or intergovernmental bodies. However, there is a need for more balance of the existing structures to increase the legitimacy of current governance arrangements, and to solve and avoid issues like fragmentation. In this regard, the participation of all stakeholders is relevant.

The workshop heard about the various net neutrality and zero-rating approaches in countries such as the Netherlands, Denmark, the US and also the European Union. In particular, the different approaches in the Netherlands and Denmark were contrasted and it was pointed out that there is a more successful app economy in Denmark, which has chosen not to implement prescriptive rules. But it was also said that in the US, providers have blocked applications on mobile devices, which not only hampers free expression, but restricts competition and dampens innovation, by allowing the companies that control the pipelines and airwaves, not the content creator or consumer, to pick winners and losers. The US Federal Communications Commission (FCC), under its recent open Internet rules, has been looking at zero rating on a case by case basis.

This workshop had detailed discussion on these issues.

Workshop – Internet fragmentation: Getting the next billion online

A number of issues were highlighted in this session, some of which have cross-over with the access and diversity theme:

- Developing countries are most impacted by Internet fragmentation and it impacts on how the next billion will come online, and how they will be able to access the same digital opportunities
- Social gaps between the rich and the poor are extending into digital divides defined by affordability, sometimes within the same country
- Network connectivity is still a challenge as networks are either non-existent or insufficient in terms of capacity and quality
- Capacity building is required not just for basic digital skills but also on enabling people to meaningfully participate and make use of the digital opportunities; capacity building for policymakers to establish an enabling environment is essential.

Christine Arida (Government of Egypt) highlighted the wider dimension of Internet fragmentation in developing countries, mostly the poorer quality of experience users have compared with users in developed countries (and caused by disparity in infrastructure development, affordability and language barriers), which also creates social fragmentation and gaps to actually widen. She gave examples of over the top (OTT) apps and impact on operators' ability to invest in broadband (causing throttling and increased use of 'walled gardens'). There is also a zero-rated, second-class experience. And there is Internet of Things (IoT)/cloud policy fragmentation (as policy development is often not coping with the pace of technology, meaning there are protective measures that often result in more fragmentation).

Verena Weber (OECD) pointed to the OECD work on Internet openness in the context of the OECD ministerial meeting on the Digital Economy of June 2016. She described the OECD's approach to Internet openness as a multidimensional concept based on four pillars: technical openness, such as in the use of open protocols and open standards; social openness, as in freedom of expression; economic openness, as in ability to connect and affordability of access, including competition as a main lever; and the pillar of other elements such as cybersecurity. Mexico and India are countries where competition and business innovation have achieved huge leaps in bringing more people online.

Karen Rose (Internet Society) highlighted the links between fragmentation and the digital divide, pointing out how the concept of digital divide is transforming beyond basic access into disparities in the ability to meaningfully participate on the Internet. Examples are communities being left isolated on IPv4; and policy fragmentation caused by restrictions on access to the open Internet, or due to government restrictions on use of some technologies over security concerns.

Alison Gillwald (Research ICT Africa) introduced research on regulatory approaches that can make the Internet available to more people, stressing that Internet fragmentation should not be looked at in isolation of other global and national inequalities, as it is amplification of existing ones. Challenging the notion of OTT apps being a hindrance to more investment in broadband, she stressed the importance of creating the right incentives to investment in critical infrastructure, and giving opportunity to more innovation, including zero-rating or limited services even if it brings people online on not so equal terms. Effective engagement with governments was highlighted as a key measure in addressing fragmentation. Findings by Research ICT Africa on zero-rating in four countries (Nigeria, Ghana, Kenya and South Africa) were presented.

Sorina Teleanu (DiploFoundation) presented the perspective of south eastern Europe and Romania, and how digital divides remain the top challenge in the region. Measures aimed at blocking online content (from child pornography to online gambling) were identified as challenges and potential causes of fragmentation. Geo-blocking was also said to cause fragmentation, as are languages that are based on non-Latin scripts.

Stephanie MacLellan (Centre for International Governance Innovation, CIGI) highlighted security and trust as challenges in connecting the next billions and how they are impacting Internet fragmentation. Reference was made to a study by Microsoft indicating how with increased access, cybersecurity still seems to fall behind, often as new users are either less educated on digital 'hygiene' or have access to the Internet through mobile devices that are less equipped with security tools. Building capacity in law enforcement was identified as essential, including making sure laws address digital security.

Workshop – Social media and youth radicalisation in the digital age

This was an important workshop on one of most pressing issues concerning the Internet, and is likely to remain so. In 2015, UNESCO organised the first conference on Internet youth and radicalization at a time when people thought the topic was taboo, and following that the UN Secretary-General presented a UN action plan for preventing violent extremism and radicalisation, and the subject is now much more out in the open.

Indrajit Banerjee (UNESCO Director for Knowledge Societies) shared the outcome of UNESCO's conference, 'Internet and the radicalization of youth: Preventing, acting and living together', held in Quebec City, Canada, before IGF11. He said the 'Call of Quebec' outcome document urged stakeholders to question radicalisation narratives online, and to respond through counter-narratives and education that emphasises critical thinking, tolerance and respect for human rights.

Guy Berger (UNESCO Director for Freedom of Expression and Media Development) pointed out the complexity of the issue of media and radicalisation and presented initial findings from UNESCO's ongoing research on social media and radicalisation. The research has taken an evidence-based approach through an extensive review of diverse studies across multiple languages and regions.

It finds there is still little theorisation of those complex issues of extremism, terrorism and radicalisation. There is also no scientific evidence of clear causal connections between what happens on social media and the radicalisation process, and the role of Internet is more of a facilitator rather than a driver of the radicalisation process.

The research calls for a global dialogue based on a multistakeholder approach and a holistic solution which goes beyond protective responses like blocking and filtering of content, and focus on empowering young people both online and offline. The research will be finalised in 2017.

Sofia Rasgado (Council of Europe) shared the good practice of a Portuguese campaign to decrease hate speech, cyber-bullying and cyber-hate, based on human rights education, youth participation and media literacy. Google's William Hudson argued that content take-down and censorship are insufficient to combat radicalisation, and he presented Google's ongoing counter-speech efforts to build a platform for true solidarity and understanding.

Barbora Bukovska (Article 19) expressed her concern that the lack of definition of the concept of radicalisation could lead to violations of human rights. She welcomed UNESCO's promotion of positive policy measures, including various counter-speech methods, arguing that these are a more effective tool to fight the underlying social causes leading to radicalisation.

Rebecca MacKinnon (Ranking Digital Rights) said that civil society is often under dual attack by governments and extremist groups, and pleaded that the protection of human rights online and offline and the defence of civil society and independent journalists are crucial to solve the problem of radicalisation in the long run.

Participants raised a number of questions related to criminalisation of hate speech, freedom of religious expression, balancing rights, personalised content, etc. A common theme was that all stakeholders need to critically assess the problem of youth radicalisation and join their efforts to invest in holistic and effective solutions that take consideration of human rights implications and gender issues, and which take counter-measures and youth empowerment actions.

Workshop – Smart cities and big data: Boundless opportunities?

Issues included:

- There are no clear narratives about what smart cities initiatives are
- Are smart cities a global or local solution?
- There are still too many doubts about the impact of smart city initiatives on citizens and their participation in decision making, their privacy, who is involved, etc.
- There is a lack of public policies to help shape these initiatives.

Amber Sinha (Centre for Internet and Society, India) commented on assumptions about the 'big data discourse' – that data-driven technologies are neutral, when they are not; and there are global solutions, when there are not, especially if it is considered that public spaces evolve with time. Context is very important, and there is a need to consider local solutions. In India, there is no understanding on what it means to have smart cities, and the discourse is dominated by the state not citizens.

Jamila Venturini (FGV School of Law, Brazil) said that in Brazil the narrative on smart cities is unclear. There are no comprehensive policies on access to information, digitisation, and data protection. However, there are command and control centres, and initiatives deployed around large events, although with no coordinated efforts and no transparency. She noted that consent to collect and use data from citizens must be required and there is a need for more multistakeholder action.

Gemma Galdon Clavell (Eticas Research and Consulting) noted that there is a need to rethink smart cities as there is a situation of 'data despotism'. Those leading smart city initiatives are not winning hearts and minds of the people by failing to included them. In Barcelona, Spain, citizens are trying to gather new ideas about smart cities, she said.

Max Senges (Google) noted work by his company such as the Google car that gathers and aggregates data that can help make traffic improvements.

Niels Ten Oever (IETF) said that smart cities are creating problems very similar to industrial control systems. He added that there already standards for authentication, security and privacy but these are not yet being applied in the field of smart cities. Standards bodies are slowly understanding the impact on human rights, but essentially with smart cities authorities are "outsourcing ethics and responsibilities to algorithms". Citizens must have processes by which they can take control of their devices.

Guilherme Canela (UNESCO) said that cities are overcrowded and more social and urban problems are arising, and argued that local authorities fear the problems and so are buying technological solutions. But policy frameworks and fundamental rights such as access to information are lacking.

Participants agreed that the terms smart cities and big data still have to be understood, and in particular their impacts on privacy and citizen participation. There is much to do in making

smart city initiatives work for development, democracy and human rights, and not against them.

Workshop – Public Wi-Fi/open access models in developing countries

This workshop could also feature in the access and diversity theme – but Wi-Fi/open access is very much an emerging issue in developing countries given the paucity of fixed systems and often costly mobile data services. Among the questions:

- Are existing public Wi-Fi models feasible solutions to overcoming cost as a barrier to access? Is their coverage a limiting factor?
- Is reducing risk a good way of moving forward to establish public Wi-Fi especially through the public-private partnership (PPP) model? What models can be complementary to GSM mobile networks?
- Is the existing licensing and regulatory regime creating a non-level playing field between telecoms service operators and over the top providers in competition for the same services?
- What are the relationships between fibre networks, public Wi-Fi projects and community networks?
- What other spectrum access/community self-provision models are contributing to affordable access to broadband?

Christopher Geerdts (Wireless Access Providers' Association, South Africa) said his association's model is founded on the principle that access to the Internet is a human right and should be delivered with the support of the government. In South Africa, commercial opportunities have been constrained by an ineffective policy and regulatory environment, and the government has been slow to provide Internet access through free Wi-Fi points at public buildings and facilities, although it is 'on paper' in a number of municipalities and provinces.

He spoke about Project Isizwe, which facilitates the rollout of public Wi-Fi and that has nearly 800 sites across South Africa, having started in higher education. The project has built a portal for jobs, employment, health, and local video content creation. On a negative note, there is minimal community participation in network development and it is not open to other service provides. There is also a high site start-up cost and the project has not been replicated in other parts of South Africa. The tenet of their launch was based on the idea of everything being free to access on the Internet; however, they are exploring other models, for instance, the internet.org initiative aimed at delivering the Internet from space, advanced by Facebook.

Erick Heurta (Rhizomatica) described situations in Mexico, Columbia and Nicaragua. In Mexico, connectivity is achieved through satellites with about 30,000 antennas spread across the country, located in places such as schools, so providing public Wi-Fi. But users can hardly download materials from the Internet due to network congestion and limited bandwidth. In Columbia, municipalities provide Wi-Fi to the public. In Nicaragua, access to the internet is difficult and there is reliance on GSM networks with no access to submarine cables. There is need to explore social coverage in telecoms.

Moctar Yedaly (African Union) said governments are cautious about paying for free public Wi-Fi as they have no control over what people go online for and did not want to sponsor their use of the Internet for activities that are not worthwhile, such as pornography. There is therefore not much support for free public Wi-Fi as a policy and regulatory strategy.

Alison Gillwald (Research ICT Africa) responded by saying that while she disagreed with limitations on use, data caps that generally apply mean there is not a lot of surplus bandwidth available to people in any case. Interviews done at Wi-Fi points indicate that people use the

bandwidth either to access free government sites or for software upgrades and video on YouTube. Although there appeared to be dissent with the African Union view, certainly among panellists, she urged the IGF community to engage more actively with the African Union and African governments.

In the discussion it was stressed that although fibre prices have come down, local access remains prohibitive, and getting national backbone prices down further is a priority. Universal service funds should be used to support access.

Free public Wi-Fi addresses the problem not only of access but also affordability of services. Wi-Fi network operators can supply data more cheaply than mobile network operators because the backhaul infrastructure is usually subsidised by a government organizations and access network rollout costs are low. However, coverage is limited to selected public buildings and public spaces, leaving almost all households uncovered. In addition, quality can be variable. But public Wi-Fi is providing access to a large number of people across Africa. Rwanda, Dakar, Togo, Kenya and Tanzania that have initiated free Wi-Fi projects in certain cities and townships, petrol stations and airports. In Rwanda and Zimbabwe Wi-Fi hotspots are also developing rapidly.

It was noted that OTT services can put unfair burdens on telecoms operators, although this was disputed – some operators are hanging onto old voice models of communications, whereas others have embraced the opportunities that data provides. Competition issues need to be examined on a case by case basis at each level of the value chain.

Workshop snapshots

In keeping with the SDG theme there was a forward looking workshop on 'Security, privacy and the ethical dimensions of ICTs in 2030'. It raised these issues:

- Considering the extensive impact that ICTs will have on the achievement of the SDGs, what actions need to be taken now to ensure the implementation and impact of ICTs will be beneficial to all of humanity?
- There is a need to infuse ICTs with an ethical component that focuses on the role of humans and the preservation of human values
- Privacy issues will evolve as new technologies, such as artificial intelligence and virtual reality, become ubiquitous
- To achieve the SDGs, it is important to consider roles, accountability, transparency and education in an open multistakeholder process.

Trade agreements have become a key issue and are likely to be on the agenda of many governments, and the IGF can play an important role in 'bottom-up' debate in what are traditional top-down negotiations. In a workshop entitled 'Meet TiSA: The trade agreement you've probably never heard of', the Trade in Service Agreement (TiSA) was discussed as a case in point, as its proposals contain provisions on data flows and data localisation, which could affect rights to personal data protection and privacy and there could be negative effects on freedom of expression and the rule of law. However, TiSA should not undermine net neutrality.

It was said that trade is not bad per se, but it cannot be used to undermine human rights and fundamental freedoms online. If digital rights are included, these need to be adequately protected in the text. There needs to be more awareness about how trade agreements work and how the Internet community can be engaged in the discussions. The organisers of the workshop proposed several sessions on TiSA at RightsCon 2017, held in Brussels.

Another trade workshop was '[Trans-Pacific Partnership (TPP): Good or bad for the Internet?](#)' Although the US was clearly going to pull out of TPP other countries are considering putting it into effect. Issues at the workshop included:

- Are the copyright and trademark aspects of the TPP threats to Internet freedom?
- Are the liberal e-commerce aspects of TPP worthy of support and if so, do they offset the intellectual property issues?
- Should intellectual property rights (IPR) be included in trade agreements or not?

There was criticism of the IPR aspects of TPP, which require copyright terms to be extended from life+50 years to life+70 years in 6 of 12 countries, and also of harsher punishments to access trade secrets, putting journalists, civil society, and whistle-blowers at serious risk. But a counter was that opponents of TPP have failed to differentiate themselves from protectionist opponents of free trade.

It was concluded that the role of IPR in trade agreements will continue to generate controversy, that trade agreements should not be used to address policy issues that already have well-established, expert agencies to handle them (e.g. domain name trademark conflicts), and consultation arrangements at the national level that feed into trade negotiations need to be broadened to include a wider range of interests – not just business multinationals.

A workshop entitled '[How to acknowledge cyber evidence: Reform or new parallel law](#)' examined whether modernising existing criminal law is good enough to address human rights and criminal activities on the Internet – i.e. the coexistence of real and virtual domains. Or does law enforcement need separate legal and administrative frameworks for the cyber-world?

One opinion from a lawyer was that cybercrime is not a different crime but an extension of traditional crime and that law made specifically for technology will not work, as technology keeps changing. The challenges of keeping it updated will be difficult and the law should reflect the crime, and not how the crime was committed. While not totally against cyber laws, he said considerable precautions will be needed.

Conclusions were that everyone agreed that there is a need for acknowledgement of cyber-evidence but opinions vary on cyber laws, with some saying they are needed, others saying they are not, and others saying that if they are necessary, a precaution is needed to make them effective.

OPEN FORUMS OVERVIEW

Youth IGF – EU Delegation Open Forum

Over 150 participants attended this open forum during which it was underlined that youth represents one of the most important layers of the multistakeholder model. In their messages to decision-makers, young people underlined the need for capacity-building in different aspects of Internet governance, among them safe and responsible use of the Internet, a culture of cybersecurity, privacy, entrepreneurship, Internet functionality, and Internet ethics. They underlined the importance of the availability of training sessions in local languages and that these be accessible in different regions of the world. It was also emphasised that media literacy needs to be part of the school curricula. They said that they need the help from leaders not only on how to set up a youth IGF meeting, but how to make it sustainable.

Open Forum – Mexico's National Digital Strategy Impact

This session, organised by the host country, highlighted gob.mx, which is a single point of access for all citizens that promotes innovation in government, boosts efficiency, and transforms processes to provide the population with information, integrated services and a digital platform for participation. Through gob.mx/tramites, Mexican government aims to democratise access to public services emphasised by the UN and the SDGs. Within a year of the launch of the portal in 2015, gob.mx registered nearly 200 million visits.

Open Forum – Japan and the G7 ICT Ministers Meeting

Vice Minister Shigeki Suzuki shared the outcomes and further work of the G7 ICT ministers meeting in Takamatsu, Kagawa, emphasising that the G7 members had reaffirmed fundamental principles such as promoting and protecting the free flow of information, and supporting a multistakeholder approach. Speakers from the EU, other countries and from business and the Internet Society backed up the messages.

Open Forum – Germany

Germany set up a steering committee for its national IGF in 2016 it has 26 members, representing seven stakeholder groups (national parliament, national government, business, technical community, academic community, civil society and youth) with four members for each stakeholder group plus two youth delegates from the German youth IGF. It was stressed by speakers that a national agenda for Internet governance has to include both a broad spectrum of public policy issues (including cybersecurity, digital economy and human rights) as well as technical issues and the interlinkage between the two layers. A number of initiatives were discussed including a controversial draft of a European charter for digital rights, which was drawn up in Germany, and a decision by the German government has decided to fund a new research institute that will cover the Internet and society.

Open Forum – IEEE - Advancing Solutions for Internet Inclusion

This session noted that universal internet connectivity and inclusion has emerged as one of the most important opportunities and challenges to be addressed. Among the topics covered:

- What does it mean to be a 'netizen', and what role/control will governments have in Internet and information sovereignty?
- Concerns are growing about privacy in the Internet of things (IoT), and transparency about what is being done with the information collected, and the need for standards to certify the level of privacy provided by each device and service.

- Requiring technology to access important services if done too soon or improperly can itself lead to digital exclusion for those who can't afford it or for whom it is otherwise inaccessible.
- Last mile connectivity is not just the responsibility of large corporations, but can also be done by civil enterprises and others.
- Regulations can be interpreted in many different ways and require clarifications from policymakers with the help and input of technologists. There is a need for a database of best and worst practices.

Open Forum – ISOC - Future Internet Scenarios in 5-7 years

This session was hosted by the Internet Society, which has gathered community input on the future of the Internet, receiving over 1,100 responses from about 135 countries. Participants divided into breakout groups to tackle the following questions:

- Will all segments of society have an equal opportunity to meaningfully participate in and benefit from the Internet?
- Will countries that are ahead in Internet technology, infrastructure and innovation simply accelerate their lead in the future or will developing regions equalise the gap?
- Will differences in connection technology, quality, and level of Internet openness lead to fundamentally different Internet experiences and levels of opportunity?

Some of the solutions that were raised were user friendly and accessible e-government interfaces, toolkits with mobile access equipment, parents' awareness about benefits of the Internet, children and young training about safety online, and recognition of organisations that have made big advances in access to Internet and local technology development. The most popular proposal was about understanding local needs and why people want to be connected, and that it isn't just costs, but having access to content in a language you understand, and getting more e-government services. See also http://www.internetsociety.org/future-internet

Open Forum – Internet and Jurisdiction

The forum updated participants on the Global Internet and Jurisdiction Conference, which took place in Paris in November 2016. The conference summary is available at http://www.internetjurisdiction.net/uploads/pdfs/GIJC-Secretariat- Summary.pdf Key messages are:

- Enact global solutions rather than unilateral approaches
- Move beyond dialogue and toward the development of operational solutions
- Ensure transparency and accountability for cross-border requests regarding data, content, and domains
- Identify good practices and establish systems for their monitoring and evaluation
- Establish clear rule of law and due process systems for interactions across borders
- Further expand outreach efforts to broaden geographic inclusion in the Internet and jurisdiction policy network.

Open Forum – WIPO - Copyright and Disabilities

This forum was hosted by the World Intellectual Property Organization (WIPO) and covered the Marrakesh Visually Impaired Persons Treaty (2013) and other initiatives such as the Accessible Books Consortium (ABC), noting they can have a great impact on the production and distribution of books via the Internet. The book famine and the lack of access to information is linked to the low rate of employment of people with disabilities and is only

partially caused by legal issues; technological and economic factors including access to the Internet are often the major barriers. The network of libraries around the world could play a key role in enabling customised and targeted access to people with disabilities, but enabling access for people with disabilities other than visual impairment presents challenges that need to be addressed in parallel.

Open Forum – OAS - Cybersecurity Programme

The Cybersecurity Program of the Inter-American Committee against Terrorism (CICTE) has been building the cybersecurity capabilities of the members of the Organization of American States (OAS), to prevent and respond to cyber incidents for over a decade. Its aims are to increase access to knowledge and information on cyber threats and risks; to enhance the technical and policy capacity of governments and critical infrastructure operators to detect cyber threats, respond to cyber incidents, and combat cybercrime; and to promote more robust, effective and timely information-sharing, cooperation and coordination among cybersecurity stakeholders at the national, regional and international level.

Speakers stressed the importance of protecting cyberspace from cyber threats, while preserving Internet openness and fundamental values, such as privacy, freedom of speech, and the free flow of information. The adoption of a multistakeholder approach in the formulation of cybersecurity strategies was also highlighted. The methodology employed to assist member states in the formulation of national cybersecurity strategies is a learning and ongoing process, and the Cybersecurity Program is open to comments and recommendations from different sectors.

Open Forum – DiploFoundation

The session updated participants on activities of the DiploFoundation (Diplo), which helps to increase the role of small and developing states and improve global governance and international policy development. Participants heard about the Geneva Internet Platform (GIP) project and the creation of hubs worldwide. GIP was created to serve permanent missions in Geneva (especially from small and developing countries) with briefings on developments in Internet governance and digital policy. Digital Watch (DW) – an initiative of the GIP in partnership with the Internet Society – provides an Internet governance and digital policy observatory. The forum also heard speakers from hubs in Tunis, Jakarta and Rio.

Open Forum – Access Now

Brett Solomon presented the history and origins of the organisation, which advocates for digital rights. It runs a 24-hour helpline that offers technical assistance and advice to civil society. Issues discussed included surveillance reform, net neutrality, and intermediary liability as priority areas. Access Now has a grants programme for civil society to receive funding and support.

Open Forum – INFOTEC Mexico - Impact of e-Commerce in Vertical Markets

This open forum, proposed by AMIPCI (Mexican Internet Association) and INFOTEC Mexico explored the impact of e-commerce in vertical markets. A major part of the forum was a case study about the shoe industry in Mexico.

Open Forum – ITU - WSIS Action Lines and the SDGs

The session recognised that the effective implementation of the WSIS Action Lines can help accelerate the achievement of the SDGs, and that the WSIS process, including the WSIS Forum

and the WSIS Stocktaking, is positioned to be one of the key global ICT-related processes for supporting the implementation of the SDGs. Participants also appreciated that the ITU had organised this session in the Americas region, thus bringing to the table a regional perspective. A regional WSIS stocktaking report, 'ICT Projects and WSIS Action Line related activities in the Americas region (2014-2016)' was launched at the session, which also welcomed the WSIS Prizes 2016 awardees from the region who showcased their projects. Participants were invited to submit proposals for the WSIS Forum 2017: Information and Knowledge Societies for SDGs.

Open Forum – African Union

There is a need for African countries to agree on continent-wide Internet governance priorities to maximise uptake of ICTs, but few have yet achieved a multistakeholder approach in their Internet governance processes. This session heard about the challenges facing Africa for ICT to become an enabler of the SDGs, and included presentations by Africa's IGF (AfIFG) and the African School of Internet Governance (AfriSIG).

Open Forum – Cyberspace Administration of China - Fostering Culture Diversity and Exchanges on the Internet

Speakers from China's Cyberspace Administration emphasised the importance of culture diversity and exchanges and the critical role of the Internet. Fostering cultural diversity and exchanges is the key to building a cyberspace of shared destiny.

Open Forum – Freedom Online Coalition

Several Freedom Online Coalition (FOC) member governments had declines in scores in the Freedom House 2016 Freedom of the Net Report, and it was suggested that the FOC re-examine its admission criteria and how it evaluates its existing membership. AccessNow presented the FOC with a petition of nearly 50,000 signatures from 148 different countries calling on world leaders to end government-sponsored, intentional disruptions of Internet and mobile services as part of the #KeepItOn campaign. The campaign documented at least 51 shutdowns in the first 11 months of 2016, and asked the FOC member governments to work together to counter this troubling trend. Justin Keyes, US Department of State, noted that the FOC committed in October 2016 to issuing a joint statement on network shutdowns, with the governments of Ghana and the US leading the drafting process for the FOC with input from external stakeholders.

Open Forum – ICANN

The main purpose of the ICANN session is to update participants on ICANN's work and to address questions. ICANN's CEO noted that much of his focus had been on improving transparency by including more information in reports issued by ICANN. The organisation is working on 'demand driven engagement' to better understand the needs of each of the ICANN stakeholder groups in all regions. Engagement in ICANN means far more than just attending a meeting; lots of work takes place online and anyone is welcome to sign up and participate in any working group. Issues such as DNS security and stability, and making ICANN more inclusive and accountable were highlighted in the discussion.

Open Forum – European Commission

This session presented the Global Internet Policy Observatory (GIPO), which is funded by the European Commission. It provides a practical and automated tool to navigate through the

maze of issues and documents related to Internet policy and governance. See http://www.giponet.org

Open Forum – Egypt

The forum discussed the challenges that face the expansion and diffusion of ICTs and building information societies, particularly in developing countries. The session featured a number of presentations, including from Egypt's Information and Decision Centre, which supports the government of Egypt in ICT policy; the Egyptian Telemedicine Foundation; Africa's wide needs, by the chair of Nigeria's IGF; and the role of Egypt's Ministry of Communications and Information Technology in supporting social responsibility. There was also a presentation on the UN World Food Program and use of ICTs in Egypt.

Open Forum – CGI.br - Fostering Dialogue on Internet Observatories and Maps

This session explored issues concerning observatories such as the importance of common taxonomies, availability of funding sources, respecting and promoting multilingualism, the and the importance of aligning with the global IGF agenda.

Open Forum – World Economic Forum - Internet for all: Improving global and regional coordination

This forum was organised by the World Economic Forum. Key issues raised were:

- The offline population is mainly in Asia Pacific and Africa and disproportionately female
- 'Business as usual' will result in missing the 1.5 billion target of new internet users by 500 million
- Decision makers, whether companies, civil society and governments, don't have the data needed to make decisions on policies, investment, and new initiatives
- Defining Internet access clearly is important, in terms of capacity, content and accessibility for all kinds of people, including persons with disabilities
- Local communities need to be included in collaboration and coordination efforts among stakeholders
- Countries aren't benefiting from discussions with the multilateral development banks, finance ministers and the technical communities.

Speakers addressed all these topics, and Vint Cerf, speaking on behalf of People Centered Internet, made the following four points in concluding. First, the internet has almost a biological characteristic. It's made up of a lot of parts, lives in an environment that keeps changing, and the way that organisms survive is that they adapt to changing conditions. So to increase internet penetration, top down approaches are less effective, generally, than making sure you have enabled and empowered people who are motivated to build pieces of the Internet and find places to connect to. Second, it is important to consider the readiness of people to connect to the Internet. If we want another 3 billion people to be connected we have to ask for each of them, are you ready to be connected? Readiness in all of its dimensions, financial and educational and everything else, is very important. Third, what we need is for the right stakeholders, and a critical mass of stakeholders, to be working together to accomplish the objective of connecting new users. Lastly, it is important to consider people-centred internetworking. The most important metric we have is, did we make anyone's life better when we took the actions that we took?

Open Forum – British Computer Society - Cyber Identity

This forum was organised by the British Computer Society to explore identity access and management systems (IdAM). Questions asked included how to ensure IdAM systems do not exclude people and now to resolve security and privacy conflicts of interest. There was also a complementary lightning session on cyber identity.

Open Forum – UNESCO

The session covered UNESCO's concept of Internet universality and its ROAM principles (that the Internet should be human Rights-based, Open, Accessible, and governed by Multistakeholder participation) can contribute to the achievement of the Sustainable Development Goals. UNESCO has launched a project to develop Internet development Indicators to make the ROAM principles effective tools for policy. It is also conducting a study on the multistakeholder model, and a new study on privacy, free expression and transparency was launched just before the IGF.

Guy Berger introduced UNESCO's plans to transform the ROAM principles into Internet development Indicators. This will be done through an 18-month project involving regional consultations, feedback through an online platform, and piloting the indicators in three countries. He acknowledged the challenge of creating a holistic package with a limited number of indicators. Berger also announced the UNESCO publication on privacy, free expression and transparency. Among the topics covered include the need for privacy by design, applying privacy rights to foreign citizens, and higher standards for corporate behaviour through self-regulation and co-regulation

There was a report on the EURid-UNESCO world reports on internationalised domain name (IDN) deployment. The report is now online and regularly updated. While there has been much progress with universal acceptance of IDNs, they still represent just 2% of worldwide registered domain names. The top three scripts used in IDNs are Latin, Han and Cyrillic.

In the discussion, it was observed that the multistakeholder model is likely different today than when it was first developed in the 1980s when the Internet was much smaller. The question was raised of how the multistakeholder model is different from other forms of public deliberation.

Open Forum – OECD Digital Economy Ministerial

Forum participants heard a summary of the OECD Digital Economy Ministerial Meeting that was held in 2016 in Cancún, Mexico, which had a declaration as a key output. A new OECD project on digitisation was also mentioned (now known as Go Digital – http://www.oecd.org/going-digital). Among the topics raised:

- The road ahead is collecting data and good analysis on the impact of digitisation in several sectors so that policymakers deal with facts and knowledge instead of suppositions
- The OECD should lead in analysing sectors other than ICT
- The challenge is coming up with a framework that can be applied to both developed and developing countries
- The OECD should channel the paragraph of the declaration that talks about multistakeholder arrangements to discuss the digital economy, and not only Internet Governance issues, to the G20
- Make the criteria for participation in the ministerials by developing countries more transparent
- Include the component of connectivity in the digitisation project

- The digitisation project should not look into Internet governance, so as not to overlap with other exercises currently in place
- Improve the manner in how controversies are discussed, so that they are not automatically taken away from future declarations.

Open Forum – ITU-UNESCO

The session provided insights into the work of the ITU-UNESCO Broadband Commission, which was launched in 2010 to look into digital development, connectivity, infrastructure, education and capacity building, while bringing in the expertise of a broad range of stakeholders. With the adoption of the 2030 Development Agenda in 2015 the Broadband Commission was reconstituted as the Broadband Commission for Sustainable Development, and as such is now focusing on the ICT in the SDGs.

The forum provided a platform for members of the Broadband Commission and other stakeholders to present initiatives, such as the US government's Global Connect Initiative, the WEF's Internet for All, Ericsson's Connect to Learn programme, and UNESCO's Internet Universality concept.

Speakers agreed that expanding connectivity to the unconnected areas of the world is essential for accelerating the implementation of the SDGs and for allowing all countries and individuals to be part of the digital era. Reference was made to ICTs in supporting the SDGs on education, women's empowerment, social and financial inclusion, accessibility, eradication of poverty, and peace and justice. Participants added a number of ideas:

- Not focusing solely on connectivity, but also on access and inclusion. Rolling out infrastructure is important, but making sure that communities see the value of ICTs and know how to use them is key for increasing the positive impact of ICTs
- Creating an enabling policy and regulatory environment to encourage investment and innovation
- Encouraging grassroots solutions tailored to the needs of the local and rural communities;
- Identifying ways to increase affordability
- Increasing collaboration among existing initiatives, and involving other sectors such as education, banking, health etc. to address the implementation needs of each SDG.

Open Forum – Cuba

This session comprises presentations by Cuba's Ministry of Education on the use of the Internet in the educational system in the country.

Open Forum – Cuba and Women

This forum detailed the experiences of the University of Informatics Sciences in the participation of women in ICT in Cuba and the inclusion of Cuban women in the ICT sector generally.

Open Forum – Commonwealth

The session was organised by the Commonwealth Telecommunications Organisation (CTO), and reviewed progress with initiatives such as the Commonwealth Cybergovernance Model, agreed by the Commonwealth ICT Ministers Forum, and the Commonwealth Cybercrime Initiative (CCI). A UK proposal to establish a Commonwealth IGF working group to contribute

to Phase III of the IGF inter-sessional work on access for the next billion(s) was agreed. The CTO will take this forward. It was also agreed that the re-launched Commonwealth IGF should engage in the IGF's intersessional coordination of the National and Regional IGFs (NRIs). The CTO will act as facilitator.

Open Forum – UN Women

The key issue raised during this forum was how to approach the challenges related to the gender digital divide. There was a presentation on Equals, the global partnership to end the gender digital divide. This presentation covered the 3 areas of action of this multistakeholder partnership: access, skills and leadership.

Open Forum – Indonesia IGF

This was a lively session that discussed a number of topics concerning social media, including:

- Social media role in civic engagement – decision making, information dissemination, political hacking, participation, fundraising
- Double edge sword of social media: it can help topple power (e.g. Tunisia) and help the incumbent to stay in power (e.g. Turkey)
- The Internet is polarising people – the echo chamber is real during elections or other political process.

WHAT ELSE HAPPENED AT IGF11?

'Day 0' Events

The day before the meeting itself kicks off, a number of sessions take place of varying types. Some serve as preparatory meetings for more detailed sessions to come. Others help to orient delegates. Some are also mentioned elsewhere in this report. Among these day 0 sessions at IGF11 were:

- [A host country session](#) organised by Mexico with speakers giving an update on the IGF as a multistakeholder space and Mexico's national digital strategy speakers made a clear link between Internet governance and the SDGs. The Internet's core values of openness, freedom, resilience, safety and decentralisation are fundamental for enabling inclusive and sustainable growth.
- A session entitled '[Advancing solutions for connectivity: improving global coordination and collaboration](#)' – this was organised by ICANN, the IEEE, the Internet Society, the ITU, Global Connect, UNESCO, the World Bank, and the World Economic Forum, and set the scene for collaborative discussion, particularly for the IGF's initiative, 'Connecting the Next Billion Phase II'.
- In '[Community networks: How to build connectivity?](#)', the session discussed the opportunities offered by community-built networks, and the various economic, social, and regulatory obstacles to developing them. While communities need to be active in looking for alternatives to get connected, several projects that aim to bring access to communities – such as Project Loon and Free Basics – were criticised by some as 'Internet for the poor'. They offer 'second-rate' digital citizenship with access to a limited set of content and services. The realistic alternatives remained an open question.
- A [session run by the OECD presented 'Broadband policies for LAC: a digital economy toolkit'](#), which aims to assist countries in the Latin American and Caribbean region to enhance their digital prospects. It is the result a two-year project involving 26 LAC countries and the OECD and the International Development Bank.
- In '[Protecting safety of journalists online and offline](#)', the UN Special Rapporteur on Freedom of Opinion and Expression criticised governments that criminalise reporters and equate them with terrorists.
- The session '[International media support: operational responses to online harassment](#)' noted that female bloggers and/or activists are usually the targets of online harassment. The best response, according to one speaker, is not from the victim herself, but from the community. "When positive responses are made by men, they have a positive impact for the situation, and for the victim."
- The Brazilian Internet Bill of Rights, known as Marco Civil, was the subject of a discussion during '[Internet bill of rights: enforcement and impact](#)'. Speakers noted that the most challenging part of the process – implementation – was taking place, with over 200 amendments being proposed. Some argued that many of the changes aim to weaken provisions such as net neutrality, non-liability of intermediaries, personal data protection, and privacy.
- UNICEF's session, '[Global Kids Online: from research on children's rights in the digital age to national and international policy](#)' – discussed the results of the first year of research of the Global Kids Online initiative – a call was made for stakeholders to seek the opinions of children. The younger generation should not be excluded from debates on children's safety and their rights online. And the [Internet of toys and things](#) was a topical look at children's engagement with the Internet and the dangers of connected toys.
- '[Mapping digital rights in the Middle East and North Africa](#)' – included a presentation on the Internet Legislation Atlas, and a visual tool that comprises a set of quantitative

indicators that allow Internet users to assess domestic legal instruments that regulate the digital space.

In addition, there were organisational sessions from the IGF and others, including:

- National and Regional IGFs: this 90-minute long session focused on the administrative and organisational issues of the National, Regional and Youth IGF Initiatives (NRIs), including looking at achievements in 2016 and ahead to 2017 work priorities for the NRIs
- The IGF Academy and Toolkit – which fosters national Internet governance structures and was started by iRights in 2016. See also http://igf.academy
- A newcomers mentor session helped participants who were attending the IGF annual meeting for the first time. (Further, during the main meeting days, this track included 'knowledge cafe´' sessions, 45 minute informal sessions open to all participants, but structured primarily for first time participants)
- The US Department of Commerce holds a pre-conference seminar for delegations from certain countries – at IGF11 it supported government and non-government participants from Afghanistan and Pakistan
- The Global Internet Governance Academic Network (GigaNet) held its 11th annual symposium on day 0. The symposium ran all day and had a number of panel sessions
- The Internet Governance Forum Support Association (IGFSA), which supports the IGF secretariat and funding activities, held its general assembly.

Lightning Sessions

This was a new format for the IGF - 20-minute sessions intended to be shorter, more informal versions of full-length workshops or presentations. Topics were selected from proposals for workshops that could not be accommodated into the main program. A total of 23 lightning sessions took place during the lunch breaks and held in a shaded outdoor plaza in front of the venue, which proved to be a gathering place for many IGF participants.
The sessions (with links to slides/reports) included:

Conflict management and human rights on the Internet

Fostering local Internet governance: Inclusion and openness

Protecting your cyber identity

Holding algorithms accountable to protect fundamental rights

Human rights online: What has Internet governance got to do with refugees?

Redefining broadband affordability for a more inclusive Internet

Research and policy advocacy tools for women's rights online
Trademarks enable sustainable growth

Unconference

Unconference, another new session format, comprised a number of unscheduled sessions held on day 3 over the course of 2 hours:

- Freedom of expression and religion in Asia: Desecrating expression – launch of a report

- *#africaninternetrights – a best practice policy*
- Derecho de videojuegos (videogames law) y Ciberseguridad: 'El Nuevo Internet of Toys'
- *Free trade agreements and Internet governance in Latin America*
- *Violencia Digital in the World*

In addition, a day 0 session (in two parts) entitled 'Collaborative leadership exchange' took an unconference format, where participants discussed key themes related to the IGF. There were more than 100 participants from organisations such as the Internet Society, DotAsia, ITU, Youth Observatory, Youth@IGF, ICANN, NIC.mx, Women with Disabilities Australia, European Institute, and the University of the West Indies. See here and here.

TAKING STOCK AND THE FUTURE OF THE IGF

In the usual 'taking stock' session on the final day, which reports on emerging issues along with the future of the IGF, feedback was given on a retreat held in New York. This was spurred by the decision taken at the UN General Assembly's WSIS+10 review to renew the mandate of the IGF for 10 years. The WSIS+10 outcome document supported the recommendations of the report of the CSTD Working Group on improvements to the IGF, and that the IGF "should continue to show progress on working modalities, and participation of relevant stakeholders from developing countries".

The retreat was a concrete first step in following up on that mandate and its output document was still open for comments at IGF 2016. In an open mic part of the taking stock session, a wide range of comments were made about the future of the IGF, including the need to bring forward more young people; to broaden the scope of participants to more sectors such as other industries; and to keep on top of new technologies as the Internet will be very different in 10 years' time. It was reiterated that more attention needs to be paid to involving developing countries and their governments, and the Sustainable Development Goals (SDGs) should be formally integrated into the IGF's agenda.

Concerns though were expressed about current control of the Internet and freedom of expression, and threats to multistakeholder forums. It was stressed that for the IGF itself to achieve its full potential there must be support for strengthening and building national IGFs that are tied to the communities that they come from. There is an ambitious goal to double the number of IGFs, and 15 had been set up over the past year. Key aims for National and Regional IGFs (NRIs) should be to develop the demand side of the Internet and to address inequalities. But NRIs should be kept agile, avoiding centralisation and institutionalism.

Other points:

- An important point was about working better with mainstream media to get stories about Internet governance in front or larger and wider audiences. There is also a need for the IGF to build bridges with other processes and organisations, and to develop more accessible materials such as infographics and videos
- A controversial point was that the IGF should set itself an end game and phase itself out – the idea should be to keep the Internet exciting and make Internet governance more boring
- Concerns for the future of support from the US for developing countries were expressed
- It was suggested that the UN Secretary-General could benefit from a special adviser for Internet governance to help makes links with the SDGs. In turn the IGF could also facilitate stakeholder groups from communities associated with certain goals
- The IGF's Multistakeholder Advisory Group could evolve to develop a longer-term vision rather than proceeding from year to year
- More needs to be done to involve the private sector in the IGF, and also diversity of participants in general
- There was a view that the IGF should move towards having a binding policy as an outcome of discussions, and should put more resources into capacity building among the NRIs
- A really ambitious aim was voiced – that the IGF should become a global instrument for resolving certain conflicts among nations.

SESSIONS BY DAY WITH LINKS TO VIDEOS, TRANSCRIPTS AND REPORTS

Main Sessions

Best Practice Forums (BPFs)

Dynamic Coalitions

Open Forums

Workshops

Day 0 and Other Sessions

Day 0 - Giganet Annual Symposium: Actors and policies in Internet governance - afternoon session
Day 0 - IGF LAC space
Day 0 - ISOC APC FGV: Community networks: How to build connectivity?
Day 0 - IG Academy
Day 0 - IGF newcomers track
Day 0 - Other
Day 0 - IGFSA General Assembly
Day 0 - Institute for Technology and Society of Italy

Day 1 - Teaching Internet governance experiences from 10 years of SIGS
Day 1 - IGF newcomers track
Day 1 - SEED Alliance awards ceremony

Day 2 - SEEDIG: Internet governance processes in Southeastern Europe, challenges and opportunities
Day 2 - Workshop Freedom House
Day 2 - IGF newcomers track

Day 3 - Asia Pacific community meet-up (APrIGF open session)
Day 3 - New session format: Unconference
Day 3 - IGF newcomers track

Day 4 - NRIs coordination session
Day 4 - Youth Coalition on Internet Governance
Day 4 - IGF newcomers track

The eleventh edition of the IGF took place in Jalisco, Mexico, from 6 to 9 December 2016. Approximately 2,000 participants from 123 countries across all regions and stakeholder groups attended the meeting.

Held on the overarching theme, 'Enabling Inclusive and Sustainable Growth', the programme gathered more than 200 sessions on a wide range of digital policy issues — from Cybersecurity and Human Rights, to Internet Economy and Gender & Youth issues online.

In keeping with the IGF's tradition of producing a complete record of annual meetings, this publication captures the discussions that took place over the course of the four-day meeting. Key issues are highlighted, and reports featured from the IGF's main sessions, workshops, open forums, and many others, as well as links to all transcripts and archived video.

IGF Internet Governance Forum